

EXHIBIT F

Confidential

In Re Petrobras Securities Litigation

Expert Report of René M. Stulz

May 27, 2016

This Report is designated confidential pursuant to the Protective Order entered on September 2, 2015, in the above-captioned matter.

Table of Contents

I.	Qualifications	1
II.	Assignment.....	2
III.	Background	3
	A. Overview of Petrobras.....	3
	1. RNEST Refinery	6
	2. Comperj Refinery	7
	3. Pasadena Refinery	7
	4. Repar Refinery	8
	B. Lava Jato Investigation.....	8
	C. Allegations	9
IV.	Summary of Opinions	12
V.	Omissions or Misstatements Related to Numeric Disclosures Could Not Have Created Inflation	14
	A. Valuation of a Company or Project	15
	B. Refinery Valuation.....	16
	C. Impact of Numeric Disclosures.....	18
	D. Market Information Regarding the Refineries at Issue.....	26
	E. Market Assessment of the Refineries at Issue	28
VI.	Plaintiffs' Damages Model With Respect to Non-Numerical Disclosures is Untenable .	32
VII.	Factors Unrelated to the Alleged Fraud Drove Down the Price of Petrobras Securities.	36
	A. Implications of changes in oil prices	36
	B. Implications of Other Factors Unrelated to the Alleged Fraud	38
VIII.	Plaintiffs' Experts Fail to Show How Petrobras's Alleged Omissions or Misstatements Inflated the Price of Its Securities.....	41
	A. Responses to Dr. Nye.....	41
	1. Overview of Dr. Nye's Opinions	41
	2. Omissions or Misstatements Related to Numeric Disclosures Could Not Have Inflated the Price of Petrobras Securities	43
	3. Dr. Nye's Damages Model With Respect to Non-Numerical Disclosures is Untenable.....	43

Confidential

4.	Dr. Nye’s Opinions Regarding Liquidity Are Unrelated to Plaintiffs’ Allegations	44
B.	Responses to Prof. Feinstein.....	44
1.	Overview of Prof. Feinstein’s Opinions	44
2.	Prof. Feinstein Fails to Show How the Omissions or Misstatements Alleged by Plaintiffs Could Have Inflated the Price of Petrobras Securities.....	46
C.	Other Plaintiff Experts	49
D.	Facts and Data Blog.....	49

I. Qualifications

1. I am the Everett D. Reese Chair of Banking and Monetary Economics and the Director of the Dice Center for Research in Financial Economics at The Ohio State University. I also taught at the Massachusetts Institute of Technology, the University of Chicago, and the University of Rochester. I received my Ph.D. from the Massachusetts Institute of Technology. I was awarded a Marvin Bower Fellowship from the Harvard Business School, a Doctorat Honoris Causa from the University of Neuchâtel, and the Risk Manager Award of the Global Association of Risk Professionals. In 2004, I was named one of the 100 most influential people in finance by the magazine *Treasury and Risk Management*. A recent study found that I was the sixth most often cited contributor to the top journals in financial economics from 2003 to 2008. I am a past president of the American Finance Association and of the Western Finance Association, and a fellow of the American Finance Association, of the Financial Management Association, of the European Corporate Governance Institute., and of the Wharton Financial Institutions Center
2. I was the editor of the *Journal of Finance*, the leading academic publication in the field of finance, for twelve years. I am currently on the editorial board of more than ten academic and practitioner journals. Further, I am a member of the Asset Pricing and Corporate Finance Programs and the director of the Risk of Financial Institutions Group of the National Bureau of Economic Research.
3. I have published more than 60 papers in finance and economics journals, including the *Journal of Political Economy*, the *Journal of Financial Economics*, the *Journal of Finance*, and the *Review of Financial Studies*. I am the author of a textbook titled *Risk Management and Derivatives*, a co-author of the Squam Lake Report: Fixing the Financial System, and have edited several books, including the *Handbook of the Economics of Finance* and *International Capital Markets*.
4. I have taught in executive development programs in the U.S., Europe, and Asia. I have consulted for major corporations, law firms, the New York Stock Exchange, the IMF, and the World Bank. I am a director of Banque Bonhote and a trustee of the Global Association of Risk Professionals where I also chair the governance committee.

5. My research, teaching, and consulting have addressed issues related to valuation, governance, securities returns, and capital flows in emerging markets. I have published many studies that investigate such issues in top refereed journals. I have lectured on such issues at universities in Asia, Europe, and North America as well as at the IMF, the World Bank, and various central banks.

6. A copy of my curriculum vitae is attached as **Appendix A** to this report. A list of prior testimony over the past four years is attached hereto as **Appendix B**.

II. Assignment

7. I have been asked by counsel for Petróleo Brasileiro S.A – Petrobras (“Petrobras”) to evaluate the materiality, and resulting inflation of the price of Petrobras securities, of the statements alleged by Plaintiffs¹ in the instant litigation to be false or misleading. I have also been asked to evaluate and respond to certain opinions included in the expert reports submitted in this matter by Dr. Blaine Nye, Professor Steven Feinstein, Dr. Vinita Juneja, Dr. John Finnerty, and Mr. Chad Coffman.

8. I am being compensated at my standard billing rate of \$900 per hour. I have been assisted in this matter by staff of Cornerstone Research, who worked under my direction. I receive compensation from Cornerstone Research based on its collected staff billings for its support of me in this matter. Neither my compensation in this matter nor my compensation from Cornerstone Research is in any way contingent or based on the content of my opinions or the outcome of this or any other matter.

9. I reviewed a number of documents in forming my opinions including SEC filings, equity analyst reports, public press, documents filed and produced in this matter, academic literature, commercially available and public data, and Plaintiffs’ experts’ reports in this matter. **Appendix C** contains a full list of documents I considered in forming my opinions.

¹ Henceforth I refer to all plaintiffs involved in related matters against Petrobras collectively as “Plaintiffs.” This includes all plaintiffs involved in the Consolidated Class Action, as well as individual opt-out plaintiffs in related matters.

10. I do not speak Portuguese. To the extent that I looked at any documents in coming to these conclusions, they were either in English originally, or translated into English.

III. Background

A. Overview of Petrobras

11. Petrobras is an integrated energy company based in Brazil with operations around the world.² Petrobras was formed in 1953 to carry out the Brazilian government's activities pertaining to crude oil and natural gas exploration, production, and refining.³ Petrobras is a state-owned entity in which the Brazilian government is required to maintain majority control of voting shares.⁴

12. Petrobras is one of the largest companies in the world. For instance, in 2013, it ranked 25th in the Fortune Global 500, which ranks companies by revenue.⁵ For context General Electric and General Motors were 24th and 22nd on that list, respectively. If it were a U.S. company, Petrobras would have been the ninth largest U.S. company by revenue in 2013.⁶ It is an integrated company that produces, refines, and distributes oil.⁷ For the purpose of my report, I will focus on the two main segments of Petrobras: the Exploration and Production ("E&P") segment and the Refining, Transportation and Marketing ("Refining") segment. Throughout the 2010–2014 time period, E&P was profitable, while Refining was generally not.⁸ In 2013, the difference in the performance of the two segments was particularly striking. In that year, E&P

² "About Us," Petrobras, <http://www.petrobras.com/en/about-us/>.

³ Petrobras, Form 20-F for the Fiscal Year Ended December 31, 2010, Filed on May 25, 2011 ("2010 20-F"), p. 28.

⁴ 2010 20-F, p. 28.

⁵ Fortune Global 500: The World's Largest Companies By Revenues In 2013," Economy Watch, <http://www.economywatch.com/fortune-global-500>.

⁶ Fortune Global 500: The World's Largest Companies By Revenues In 2013," Economy Watch, <http://www.economywatch.com/fortune-global-500>.

⁷ 2010 20-F, p. 29.

⁸ See 2010 20-F, p. 30; Petrobras, Form 20-F for the Fiscal Year Ended December 31, 2011, Filed on March 30, 2012 ("2011 20-F"), p. 28; Petrobras, Form 20-F for the Fiscal Year Ended December 31, 2012, Filed on April 26, 2013 ("2012 20-F"), p. 25; Petrobras, Form 20-F for the Fiscal Year Ended December 31, 2013, Filed on April 30, 2014 ("2013 20-F"), p. 24; and 2014 Petrobras, Form 20-F for the Fiscal Year Ended December 31, 2014, Filed on May 15, 2015 ("2014 20-F"), p. 35.

Confidential

had income before taxes of \$29.6 billion.⁹ In contrast, Refining lost \$12.4 billion.¹⁰ All of Petrobras's business segments combined reported income before taxes of \$13.4 billion in 2013.¹¹

13. In 2006, Petrobras discovered oil reserves located in what is called the "pre-salt" area,¹² which is an area located under a thick salt layer deep underwater along the coast of Brazil.¹³ The potential size of the reserves was enormous. According to Credit Suisse, from 2005 to 2010, global oil discoveries amounted to 34 billion barrels.¹⁴ 62% of these discoveries were in Brazil.¹⁵ These discoveries led to tremendous optimism about the future of Brazil and Petrobras. In a magazine on its website, Petrobras wrote:

- From the bottom of the sea – to be more precise, the depths of the pre-salt layers – a truth emerges: Brazil, in the second decade of the 21st century, is presenting itself as one of the main El Dorados for oil and gas sector investments.¹⁶

14. Brazil's President at the time, Luiz Inacio Lula, called it Brazil's lottery ticket.¹⁷ One estimate of the potential revenue for the country from pre-salt was in excess of \$1 trillion.¹⁸ Dilma Rousseff, President Lula's chief of staff at the time,¹⁹ explained in a 2009 interview that:

- Now we have a double opportunity. We can transform natural wealth into social wealth, to advance the fight against poverty. We were going to end poverty in Brazil anyway, but the pre-salt will bring that forward by years

⁹ 2013 20-F, p. 24. All currencies are reported in U.S. dollars, unless otherwise noted.

¹⁰ 2013 20-F, p. 24.

¹¹ 2013 20-F, p. 24.

¹² Petrobras, Form 20-F for the Fiscal Year Ended December 31, 2006, Filed on June 26, 2007 ("2006 20-F"), p. 33.

¹³ "Pre-Salt: Oil Exploration and Production," Petrobras, <http://www.petrobras.com.br/en/our-activities/performance-areas/oil-and-gas-exploration-and-production/pre-salt/>.

¹⁴ Credit Suisse, "The Petrobras Handbook: An Investor's Guide to a Unique Oil Company," Credit Suisse Handbook, March 2014, p. 67, https://doc.research-and-analytics.csfb.com/docView?sourceid=em&document_id=x557248&serialid=63WYZUNHeNUT3fAoiqJwG1kkgX5aVxhAen%2FeKeaDt8%3D.

¹⁵ Ibid.

¹⁶ "Deep Future," Petrobras Magazine, <http://www.petrobras.com/en/magazine/post/deep-future.htm>.

¹⁷ Doug Gray, "A

Promise Made is a Debt Unpaid," The Rio Times, October 29, 2013, <http://riotimesonline.com/brazil-news/opinioneditorial/editorial/a-promise-made-is-a-debt-unpaid/>

¹⁸ Doug Gray, "Brazil Oil

Sale Set to Generate 'Trillions' in Rio," The Rio Times, October 22, 2013, <http://riotimesonline.com/brazilnews/front-page/brazils-oil-sale-could-generate-trillions/>.

¹⁹ Dilma Rousseff Fast Facts," CNN, <http://www.cnn.com/2013/01/04/world/americas/dilma-rousseff---fast-facts/>.

because we will have more resources to do it. We will have high quality education, we will invest in science and technology. And at the same time we have the chance to create a supplies and services industry and add value to our oil.²⁰

15. Prior to 2010, Petrobras had rights to exploit part of the pre-salt area.²¹ Petrobras subsequently obtained the rights to exploit additional parts of the pre-salt area.²² In addition, Petrobras received the status of “sole operator” in the pre-salt area.²³ Prior to being designated the sole operator, Petrobras was required to compete with other companies for exploration and production agreements.²⁴ Petrobras was further required to acquire a minimum 30% stake in joint ventures with other oil companies seeking exploration licenses in pre-salt areas.²⁵

16. In addition to oil and gas exploration and production, Petrobras also engages in the refining, transportation, and sale of refined products through its Refining segment.²⁶ As of the start of 2010, Petrobras owned and operated eleven refineries in Brazil, with net distillation capacity of 1,942 thousand barrels per day (“mbbl/d”), and was developing a number of new refining projects.²⁷

17. The specific refining projects referenced in the Fourth Amended Complaint²⁸ (“Complaint”) include: Abreu e Lima refinery (“RNEST”), Complexo Petroquímico do Rio de Janeiro (“Comperj”), Pasadena refinery (“Pasadena”), and Presidente Getúlio Vargas refinery (“Repar”).

²⁰ “Full Text: Dilma Rousseff Interview,” Financial Times, September 7, 2009, <http://www.ft.com/intl/cms/s/0/75466e5a-9b96-11de-b214-00144feabdc0.html>.

²¹ See 2009 20-F, p. 35.

²² 2010 20-F, p. 13.

²³ <http://www.bloomberg.com/news/articles/2010-12-02/brazilian-congress-allows-petrobras-to-be-sole-operator-of-pre-salt-fields>

²⁴ *Ibid.*

²⁵ *Ibid.*

²⁶ 2014 20-F, p. 48.

²⁷ 2009 20-F, pp. 39 and 41.

²⁸ Consolidated Fourth Amended Class Action Complaint, In Re: Petrobras Securities Litigation, dated November 30, 2015 (“Complaint”). See, for example, ¶¶ 97, 107, 115, and 121.

1. RNEST Refinery

18. RNEST is a refinery located in the northeastern Brazilian state of Pernambuco.²⁹ The project was originally announced in Petrobras's 2005 20-F and its anticipated cost was \$2.5 billion. It was expected to process 200 mbb/d of crude oil, and operations were supposed to start in 2011.³⁰

19. In 2005, Brazilian President Lula and Venezuelan President Hugo Chavez agreed to develop a refinery together, with both countries sharing its costs.³¹ In 2007, Petrobras announced that it would partner with Petróleos de Venezuela, S.A ("PDVSA"), the Venezuelan national oil company to develop the refinery.³² The cost estimate was updated to \$4 billion in 2008.³³ Although a deal between the two national oil companies was signed in 2008, Venezuela was unable to secure loan guarantees for its 40% stake in the venture and did not provide any capital to fund construction.³⁴ Over time, costs grew to about \$20 billion, and the start of operations was continuously delayed.

20. The first refining unit at RNEST ultimately came on stream in 2014.³⁵ In its 2014 20-F, Petrobras announced that the second refining train at RNEST would be postponed for "an extended period of time."³⁶ As of February 2016, RNEST has one refining unit in operation.³⁷ 70% of the refinery's production is focused on diesel.³⁸ It also produces naphtha, fuel oil, coke, and liquefied petroleum gas.³⁹

²⁹ Petrobras, Form 20-F for the Fiscal Year Ended December 31, 2005, Filed on May June 30, 2006 ("2005 20-F")

³⁰ *Ibid.*

³¹ Kumagai, Takeo, 'INTERVIEW: Petrobras delays startup of Abreu e Lima refinery to 2014: CFO,' *S&P Global Platts*, October 16, 2012, <http://www.platts.com/latest-news/petrochemicals/tokyo/interview-petrobras-delays-startup-of-abreu-e-8822712>.

³² Petrobras 6-K, "Main Petrobras Projects in the Growth Acceleration Plan (GAP)," Form 6-K for the Month of January 2007, Filed on January 23, 2007

³³ Petrobras 6-K, "Petrobras and PDVSA Sign an Equity Partnership Agreement at the Abreu e Lima Refinery," Form 6-K for the Month of March 2008, Filed on March 26, 2008.

³⁴ Kumagai, Takeo, 'INTERVIEW: Petrobras delays startup of Abreu e Lima refinery to 2014: CFO,' *S&P Global Platts*, October 16, 2012, <http://www.platts.com/latest-news/petrochemicals/tokyo/interview-petrobras-delays-startup-of-abreu-e-8822712>.

³⁵ 2014 20-F, p. 49.

³⁶ Petrobras FY2014 20-F, p. F-51.

³⁷ <http://www.petrobras.com.br/en/our-activities/main-operations/refineries/abreu-e-lima-refinery.htm>

³⁸ <http://www.petrobras.com.br/en/our-activities/main-operations/refineries/abreu-e-lima-refinery.htm>

³⁹ <http://www.petrobras.com.br/en/our-activities/main-operations/refineries/abreu-e-lima-refinery.htm>

2. Comperj Refinery

21. Comperj is a refinery complex located in the municipality of Itaboraí and São Gonçalo, state of Rio de Janeiro.⁴⁰ The project was originally announced in Petrobras's 2005 20-F and had a budget of \$6.5 billion.⁴¹ The complex was expected to process 150 mbbbl/d and was projected to come on line in 2012.⁴²

22. In 2010, Comperj was reconfigured to process 165 mbbbl/d in its initial phase.⁴³ By mid-2015, \$11 billion had already been spent on the project and the company estimated it would cost an additional \$4 billion to finish by 2020.⁴⁴ In its 2014 20-F, Petrobras announced that construction of the Comperj refinery would be postponed for "an extended period of time."⁴⁵ As of February 2015, construction was 82% complete.⁴⁶ The first refinery unit was expected to go on stream in August 2016.⁴⁷

3. Pasadena Refinery

23. In November 2005, Petrobras entered into a joint venture agreement with Astra Oil Company ("Astra") to develop a trading and refining business in the U.S.⁴⁸ On February 3, 2006, Petrobras agreed to purchase a 50% interest in the Pasadena refinery based in southeast Texas and owned by Astra, for \$370 million.⁴⁹ The 50% acquisition was completed on September 1, 2006 for a price of \$416 million.⁵⁰ At the time, the Pasadena refinery had a capacity of about 100 mbbbl/d and was expected to increase capacity by about 70 mbbbl/d with Petrobras's entrance as a refining partner.⁵¹

⁴⁰ 2005 20-F, p. 54.

⁴¹ *Ibid.*

⁴² *Ibid.*

⁴³ Petrobras 6-K, "Clarification About Comperj Investments," Form 6-K for the Month of May 2010, Filed on May 25, 2010.

⁴⁴ Gaier, Rodrigo, "UPDATE 1-Petrobras Says to Cost \$4.3 Bln to Finish Comperj Refinery," *Reuters*, August 27, 2015 <http://www.reuters.com/article/brazil-petrobras-comperj-idUSL1N1121I20150827>.

⁴⁵ 2014 20-F, p. F-51.

⁴⁶ Rio de Janeiro Petrochemical Complex," Petrobras, <http://www.petrobras.com.br/en/our-activities/main-operations/refineries/rio-de-janeiro-petrochemical-complex.htm>

⁴⁷ *Ibid.*

⁴⁸ 2005 20-F, p. 75.

⁴⁹ *Ibid.*

⁵⁰ 2006, 20-F, p. F-83.

⁵¹ *Ibid.*

24. In October 2008, an arbitration panel of the International Centre for Dispute Resolution issued a preliminary decision in a dispute over Astra's exercise of a put option relating to the remaining 50% interest in Pasadena.⁵² The arbitration panel's preliminary decision confirmed the validity of the put option.⁵³ The final decision was issued in April 2009 and the exercise price was set at \$466 million.⁵⁴ On December 20, 2010, a district court in Texas confirmed the arbitration panel's ruling and set put option prices of \$296 million for the refinery and \$170 million for the related trading company.⁵⁵ Pasadena remains owned and operated by Petrobras and produces just over 100 mbbbl/d.⁵⁶

4. Repar Refinery

25. The Repar refinery is located in Araucária, in the state of Paraná, and accounts for approximately 12% of Brazilian domestic oil product production.⁵⁷ The refinery became operational on May 27, 1977.⁵⁸ A construction project was undertaken between 2008 and 2012 to implement a delayed coking unit at the refinery.⁵⁹ As of 2016, Repar has a capacity of over 207 mbbbl/d.⁶⁰

B. Lava Jato Investigation

26. Following the arrest of Mr. Paulo Roberto Costa, the former head of Petrobras's refining and supply business, on March 20, 2014, Brazilian Federal Police began investigating an alleged price-fixing and political kick-back scheme related to contracts between Petrobras and a number

⁵² Petrobras, Form 20-F for the Fiscal Year Ended December 31, 2008, Filed on May 22, 2009 ("2008 20-F"), p.55.

⁵³ Ibid.

⁵⁴ Ibid.

⁵⁵ 2010 20-F, p. 56.

⁵⁶ "Operations," Petrobras, <http://www.petrobras.com/en/countries/u-s-a/operations/>.

⁵⁷ "Presidente Varagas, (Repar)—," Petrobras, <http://www.petrobras.com.br/en/ouractivities/main-operations/refineries/presidente-vargas-repar.htm>.

⁵⁸ Ibid.

⁵⁹ Delayed Coker Unit for Presidente Getúlio Vargas Refinery (Repar)," Petrobras, <http://www.promonengenharia.com.br/en-us/projetos/Pages/unidade-de-coqueamento-retardado-darefinaria-presidente-getulio-vargas-coque-repar.aspx>.

⁶⁰ Petrobras, "Presidente Varagas," <http://www.petrobras.com.br/en/our-activities/main-operations/refineries/presidente-vargas-repar.htm>.

of engineering firms it contracted with.⁶¹ According to the Complaint, there were only a handful of Brazilian contractors with the technical capabilities and capacity to complete projects on the scale of those developed by Petrobras.⁶² The Complaint alleges that these companies formed a cartel to circumvent a competitive bidding process.⁶³

27. The Complaint further alleges that the cartel agreed to coordinate bids on various Petrobras projects, collectively determine who would win each contract, and rotate contract allocation among cartel members.⁶⁴

28. According to the Complaint, the cartel also created tables detailing the pipeline of projects at Petrobras's various refineries and each cartel member's preference for those particular projects.⁶⁵ These tables were allegedly used as part of the bid-rigging scheme.⁶⁶ Cartel members' bids allegedly allowed for "a 15% to 20% profit plus 3% for the kickback to the political parties and to Petrobras directors."⁶⁷

C. Allegations

29. The Complaint states that the alleged price fixing and kick-back scheme caused Petrobras's financial statements between 2010 and 2015 to be materially false and misleading.⁶⁸ Specifically, the Complaint claims that between January 22, 2010 and July 28, 2015 ("Class Period") Petrobras "made materially false and misleading statements by misrepresenting facts and failing to disclose a multi-year, multi-billion dollar money-laundering and bribery scheme."⁶⁹ According to the Complaint, these false and misleading statements include the following:

- Misstated financial statements

⁶¹ Caroline Stauffer, "TIMELINE-Key moments in Brazil's Petrobras Corruption Probe," *Reuters*, August 14, 2015, <http://www.reuters.com/article/brazil-petrobras-idUSL1N10031F20150814>.

⁶² Complaint, ¶54.

⁶³ Complaint, ¶54.

⁶⁴ Complaint, ¶55.

⁶⁵ See, for example, Complaint, ¶¶ 59–61.

⁶⁶ Complaint, ¶59.

⁶⁷ Complaint, ¶56.

⁶⁸ Complaint, ¶158.

⁶⁹ Complaint, ¶202.

The Complaint alleges that Petrobras inflated the value of Property, Plant, and Equipment (“PP&E”)⁷⁰ on its balance sheet by incorrectly capitalizing bribe payments related to inflated contracts. Further, the Complaint alleges that capitalizing these payments caused Petrobras’s Income Statement to be misstated due to lower current expenses and higher net income in the periods in which the alleged bribes were paid.⁷¹ Plaintiffs allege that reported asset values were important information for purchasers of Petrobras securities and were used in the calculation of ratios that “formed a material basis for the market prices of the securities of Petrobras... .”⁷²

The Complaint also alleges that, because of the alleged bribery scheme, “Petrobras executives granted contracts to these Brazilian construction companies that systemically inflated their costs by as much as 20%.”⁷³ According to the Complaint, this overpricing contributed to upwards of \$28 billion being diverted away from Petrobras.⁷⁴

- Misleading statement about management integrity and controls

The Complaint alleges that Petrobras misrepresented that the company “was making a concerted effort to prevent and root out any corruption” while in fact, certain of its employees were engaged in the bribery scheme before and throughout the Class Period.⁷⁵

⁷⁰ Complaint, ¶158.

⁷¹ Complaint, ¶¶162–163.

⁷² Complaint, ¶164.

⁷³ Complaint, ¶5.

⁷⁴ Complaint, ¶5.

⁷⁵ Complaint, ¶221.

The Complaint further alleges that Petrobras misled investors by confirming the sufficiency of its internal financial controls and its internal corruption and ethics programs.⁷⁶

30. The Complaint further alleges that, as information relating to the allegations was disclosed to the market, the price of Petrobras securities “fell as the prior artificial inflation came out of their respective prices” resulting in damages to the holders of those securities.⁷⁷

31. Plaintiffs’ allegations suggest that the “correct” disclosures that Petrobras should have made throughout the Class Period were:

- The amount of money that was paid in bribes and the amount of overpayment in the contracts that was incorrectly capitalized as part of Petrobras’s recorded PP&E and should have been expensed in the current period as the cash left the entity. For purposes of my report, I refer to this as a “Numeric Disclosure.”
- That Petrobras’s internal controls and corruption and ethics programs were not effectively preventing acts of corruption by certain Petrobras employees. For purposes of my report, I refer to this as a “Non-Numeric Disclosure.”

32. I deal with the implications of the Numeric Disclosures and Non-Numeric Disclosures that the Plaintiffs contend should have been made separately in this report because they were ultimately reported to the market separately. Over the course of 2014, the market learned of the Non-Numeric Disclosures as the Brazilian Federal Prosecutor’s Office conducted an investigation into potential cartel activity with respect to contracts between Petrobras and certain contractors and suppliers. In May 2015, Petrobras released its audited 2014 annual report and

⁷⁶ Complaint ¶¶ 203–221.

⁷⁷ Complaint, ¶ 489.

provided the market with a Numeric Disclosure about the amount of money that the company paid to contractors that was then paid in bribes related to the Lava Jato corruption scheme.⁷⁸

IV. Summary of Opinions

33. Based on my expertise as a financial economist, my experience, and the documents I reviewed in this matter, I have come to the following fundamental conclusions:

A. Given the allegations advanced by the Plaintiffs, the Numeric Disclosures could not have provided investors with value-relevant information that would have changed the price of Petrobras securities, and therefore, any related misstatements or omissions could not have caused inflation.

34. Principles of corporate finance demonstrate that the economic value of a refinery is equal to the net present value of its cash flows. The information contained in the Numeric Disclosures would not have changed the market's assessment of Petrobras's cash flows. Therefore, any misstatements or omissions related to the Numeric Disclosures could not have created inflation in the price of Petrobras securities.

35. Petrobras provided the market with value-relevant information on the refineries at issue before and throughout the Class Period. Securities analysts used this information to assess the value of the refineries at issue using approaches consistent with principles of corporate finance. Deposition testimony confirms that Plaintiffs, and their investment advisors, also evaluated Petrobras in a similar manner.

36. I find that, given the allegations in this litigation, the Numeric Disclosures could not have provided investors with material and important information that would have changed the market's assessment of the cash flows from the refineries at issue. Thus, using the principles of corporate finance, omissions or misstatements with respect to the Numeric Disclosures could not have resulted in inflation.

B. Plaintiffs' Damages Model with Respect to Non-Numerical Disclosures is Untenable

⁷⁸ 2014 20-F, p.3 .

37. Dr. Nye argues that the risk that the Company's internal controls would fail to detect or prevent override of those controls was a risk that was not disclosed to the market throughout the Class Period. I disagree with Dr. Nye that the Non-Numeric Disclosures disclosed an entirely unknown, new risk to the market. Petrobras specifically disclosed in its Forms 20-F throughout the Class Period that there were inherent limitations to the effectiveness of any system controls, and that such controls could only provide reasonable assurance of achieving their control objectives. Investors would have been aware of this risk. The risk of corruption in Brazil was known to the market. Moreover, not only does Dr. Nye ignore these facts, but he also fails to put forth any analytic method or model for calculating the extent to which this risk, assuming that the market was not fully aware of the risk, as Dr. Nye claims, was not priced into the value of Petrobras securities during the class period. Therefore, Dr. Nye has failed to directly establish that the Non-Numeric disclosures inflated the Petrobras securities at issue.

C. Factors Unrelated to the Alleged Fraud Drove the Decline in the Price of Petrobras Securities

38. The price of Petrobras's securities declined substantially during the Class Period, even before the alleged corrective disclosures. This substantial decline before the alleged corrective disclosures was caused by a number of factors unrelated to the alleged fraud, including: (1) changes in the price of oil, (2) stagnation in Brazil, (3) the weakening of the Brazilian Real, and (4) the continued interference in the operations of the Company by the government (with respect to, among other things, capital expenditures, pricing, procurement, and local content requirements).

39. In my opinion, the declines in the value of Petrobras securities during the Plaintiff's alleged corrective disclosure period were caused by the same of similar factors, in whole or in part.

D. Plaintiffs' experts fail to show how Petrobras's alleged omissions or misstatements inflated the price of its securities.

40. Dr. Nye fails to demonstrate how alleged omissions or misstatements would have created inflation in the price of Petrobras securities. Further, Dr. Nye's opinions with respect to

Petrobras's liquidity are unrelated to Plaintiffs' allegations and irrelevant for purposes of showing inflation in Petrobras's securities' prices.

41. Prof. Feinstein also fails to demonstrate how alleged omissions or misstatements would have created inflation in the price of Petrobras securities. Prof. Feinstein's opinions regarding cost overruns and delays at RNEST and Comperj are irrelevant. Petrobras made disclosures about cost overruns and delays before the alleged corrective disclosures. Further, the Complaint does not allege any omissions or misrepresentations related to cost overruns or delays. Finally, Prof. Feinstein fails to show how omissions or misstatements about the reasons behind cost overruns and delays at RNEST and Comperj could have caused inflation in Petrobras securities prices.

42. The opinions expressed by the other Plaintiffs' experts in this matter are flawed because they do not address the issue of how omissions or misrepresentations with respect to the Numeric Disclosures or Non-Numeric Disclosures would have inflated the price of Petrobras securities.

E. Alleged Misstatements on the Facts & Data Blog Did Not Cause Inflation

43. I find that the information contained in the posts on Petrobras's "Fatos e Dados" corporate webpage that are referenced in the Complaint would not have changed the market's assessment of the projects at issue and would not have led to inflation in the price of Petrobras securities. The relevant posts were not referenced in contemporaneous English language analyst commentary or public press, and the Plaintiffs' own testimony suggests that investors did not rely on information from these posts, and provides further support to the conclusion that the posts would not have changed the market's perception of Petrobras.

V. Omissions or Misstatements Related to Numeric Disclosures Could Not Have Created Inflation

44. Plaintiffs' experts agree that, according to principles of corporate finance, the value of companies and the projects is the difference between the present value of expected future cash

inflows and outflows.⁷⁹ Refineries are generally valued in a way that is consistent with this methodology. Factors affecting refinery cash flows include: cost and quantity of inputs, price of outputs, and refinery capacity.

45. The Numeric Disclosures could not have materially affected the value of the refineries assessed using principles of corporate finance and therefore any omissions or misstatements related to the Numeric Disclosures could not have created inflation in the price of Petrobras securities if these securities were priced efficiently. Even if the Numeric Disclosures were not made, Petrobras provided the market with the information necessary to assess the value of the refineries at issue. A review of analyst reports suggests that market participants used this information to assess the value of the refineries at issue and did not take the reported book value as their measure of value.

A. Valuation of a Company or Project

46. A company such as Petrobras can be thought of as a collection of existing or potential projects and assets, each with their own streams of expected future cash flows. As the company generates cash flows, it has the opportunity to invest them in new projects or assets that may increase the present value of future cash flows, thereby increasing the company's value.

47. If a company acquires or develops a new asset, the contribution of that asset to the value of the company is measured by how the acquisition of the asset changes the present value of the cash flows that accrue to the capital providers. The difference between the present value of the expected future cash inflows and outflows for a project or acquisition is referred to as net present value ("NPV"). Under normal circumstances, a new project or acquisition increases the value of a company if it has a positive NPV. Alternatively, a negative NPV project lowers the value of a company.

48. The expected future cash flows in the NPV calculation are discounted to reflect:

⁷⁹ See, for example, Expert Report of Steven P. Feinstein CS Report in Central States, Southeast and Southwest Areas Pension Fund v. Petróleo Brasileiro S.A.—Petrobras et al., May 6, 2016 ("Feinstein CS Report"), ¶ 135; Expert Report of Steven P. Feinstein in NN Investment Partners B.V. et al. v. Petróleo Brasileiro S.A.—Petrobras et al., May 6, 2016 ("Feinstein NNIP Report"), ¶ 135; Expert Report of Steven P. Feinstein in Washington State Investment Board v. Petróleo Brasileiro S.A.—Petrobras et al., May 6, 2016 ("Feinstein WSIB Report"), ¶ 146; and Expert Report of Blain F. Nye, May 6, 2016 ("Nye Report"), ¶ 19.

- Time value of money: Since a given amount of money received in the future is worth less than the same amount of money received today, the future cash flows must be discounted back to the present value.
- Riskiness of future cash flows: Future cash flows are not guaranteed. Rather, they come with some level of risk, and are discounted accordingly.

49. Discount rates incorporate systematic risks, which are those that investors in general cannot diversify away in their portfolios, into the calculation of the net present value of future cash flows.⁸⁰ For companies in emerging markets, discount rates take into account political risks that could affect cash flows to investors, such as risks of expropriation and corruption.⁸¹

B. Refinery Valuation

50. Oil refineries process crude oil into refined products including gasoline, diesel, and kerosene. The incremental value of a new refinery project is determined by the difference between the present value of cash outflows required to develop the refinery and the present value of cash flows that the refinery will generate.

51. While value is impacted by the total cash outflows incurred in connection with the capital investment, value is not impacted by whether the cash outflows are treated as capital expenditures or expenses for purposes of accounting since the market recognizes both as cash outflows at the time the money is spent.

52. Future cash flows from a refinery depend on a number of factors, including:⁸²

⁸⁰ McKinsey & Company, T. Koller, M. Goedhart, and D. Wessels, *Valuation: Measuring and Managing the Value of Companies*, Fifth Edition, (New Jersey : John Wiley & Sons, 2010), p. 35.

⁸¹ Aswath Damodaran, "Country Risk: Determinants, Measures and Implications – The 2015 Edition," Stern School of Business, 2015 ("Ultimately, the question of whether country risk matters and should affect the equity risk premium is an empirical one, not a theoretical one, and for the moment, at least, the evidence seems to suggest that you should incorporate country risk into your discount rates.")

⁸² Gary, James H, Glenn E. Handwerk and Mark J. Kaiser, *Petroleum Refining Technology and Economics*, Fifth Edition, CRC Press: 2007, pp. 16–21.

Confidential

- Sale price of output: Refineries produce a range of different products generally classified as gasoline, middle distillates, fuel oil, and other products. The prices of these refinery end-products vary over time and are heavily impacted by the price of crude oil.⁸³
- Quantity of output: A refinery's output is limited by its capacity. Output can also vary due to operational issues and unexpected shutdowns.
- Raw material costs: The cash flows of a refinery depend crucially on the price it pays for crude oil compared to the price it receives for refined products. In practice, the difference between the two prices is called the "crack spread." A higher crack spread means that the refinery is more profitable.

53. The factors impacting refinery economics are important drivers of how analysts and industry participants value refining projects. Refineries are often valued using the income approach. The income approach uses a discounted cash flow ("DCF") analysis to value a project based on the amount and timing of expected future cash inflows and outflows. The income approach is dependent on forecasts for production, prices of raw materials and end products, operating expenses, capital expenditures, and the discount rate.⁸⁴

54. A DCF analysis of a new refining project typically considers the amount and timing of capital expenditures prior to startup (regardless of whether they are classified as expenses or capital), any costs incurred at start up, and the amount and timing of cash flows once operations have commenced.⁸⁵ Cash flows are discounted to the valuation date to arrive at an NPV for the project.

⁸³ Note that the impact of crude oil prices on the prices of refinery end products can be limited by external factors, such as government-imposed pricing caps.

⁸⁴ Michael J. Remsha, "Appraising an Oil Refinery in the 21st Century," American Appraisal, 2009. <http://www.american-appraisal.com/AAFiles/Library/PDF/AppraisinganOilRefineryarticle.pdf>.

⁸⁵ Gary, James H, Glenn E. Handwerk and Mark J. Kaiser, Petroleum Refining Technology and Economics, Fifth Edition, CRC Press: 2007, pp. 375–378.

C. Impact of Numeric Disclosures

55. Since NPV is measured on the basis of cash inflows and outflows, omissions or misstatements related to Numeric Disclosures could not have materially contributed to inflation. The value of a project, and therefore the value it contributes to a company, is the difference between the present value of cash inflows and of cash outflows. The Numeric Disclosures would not have provided investors with information that materially changed their assessment of the magnitude of these cash flows and therefore omissions or misstatements related to the Numeric Disclosures could not have led to material inflation.

56. To illustrate, consider the example of Widget Co. Widget Co. is a widget manufacturer with market capitalization of \$1,000. The company's Chief Manufacturing Scientist is responsible for developing innovative methods for manufacturing widgets. The Chief Scientist has proposed a project to develop a new widget-making machine that will increase the efficiency with which Widget Co. manufactures widgets.

57. According to the Chief Scientist's estimates, the widget-making machine will cost \$300 to develop. Based on the market price of widgets and the expected production capacity of the machine, Widget Co. estimates that the present value of future cash flows from the project is \$400. Therefore, the NPV of the widget-making machine project is \$100 and it is expected to increase the market capitalization of Widget Co. to \$1,100. The new widget-making machine and its impact on Widget Co.'s market capitalization are summarized in Figure 1 below.

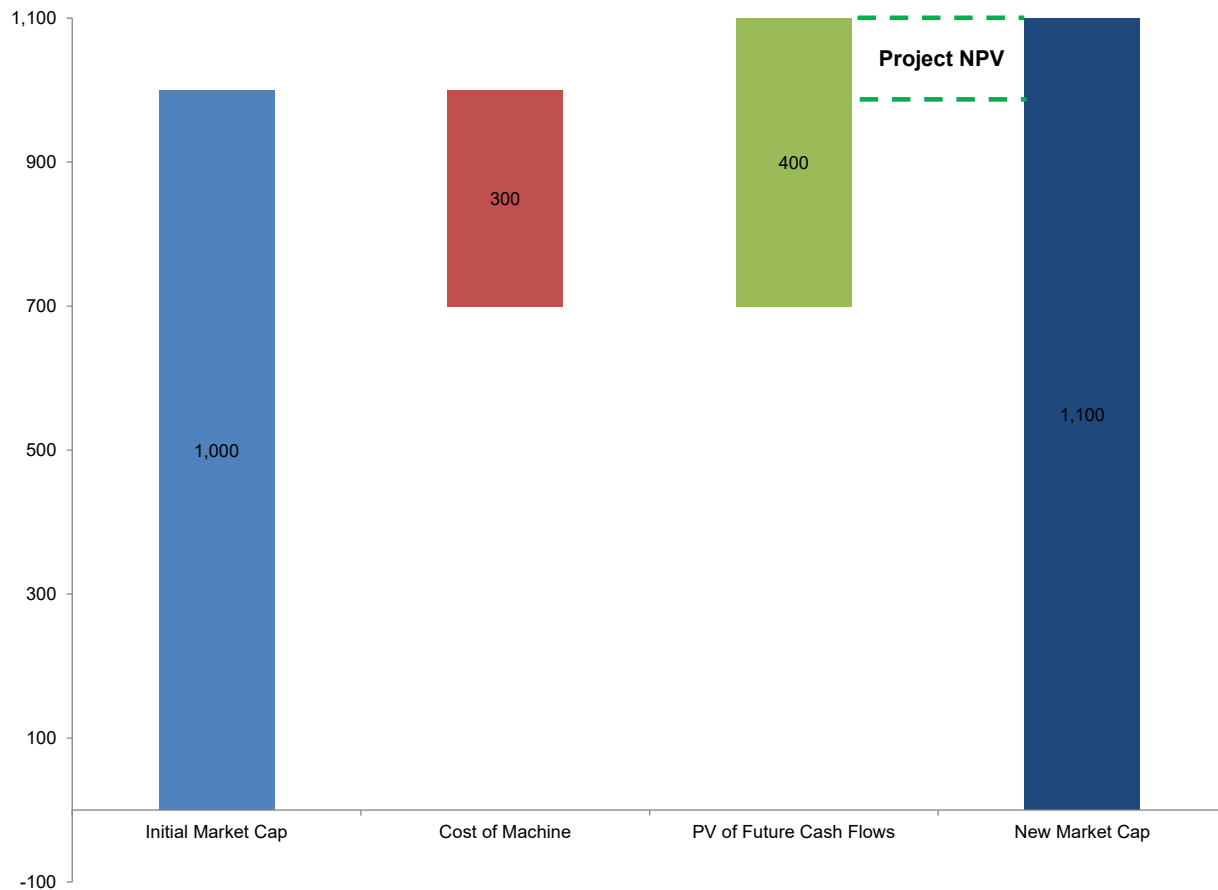
Confidential

Figure 1 – Impact of New Widget-Making Machine Project

58. The NPV of the widget-making machine can be affected by a number of different factors. As discussed above, the NPV of the project affects the overall value of Widget Co. For example, suppose it turns out that the Chief Scientist's widget-making machine is poorly designed and will only be able to produce half as many widgets as originally expected. This would have a direct impact on the expected future cash flows from the machine, as well as the market capitalization of Widget Co. If the widget-making machine will only be able to produce half the expected widgets, Widget Co. will only be able to sell half as many widgets as originally expected. Figure 2 below demonstrates the impact of the change, assuming the project's expected future cash flows would decline by 50%.

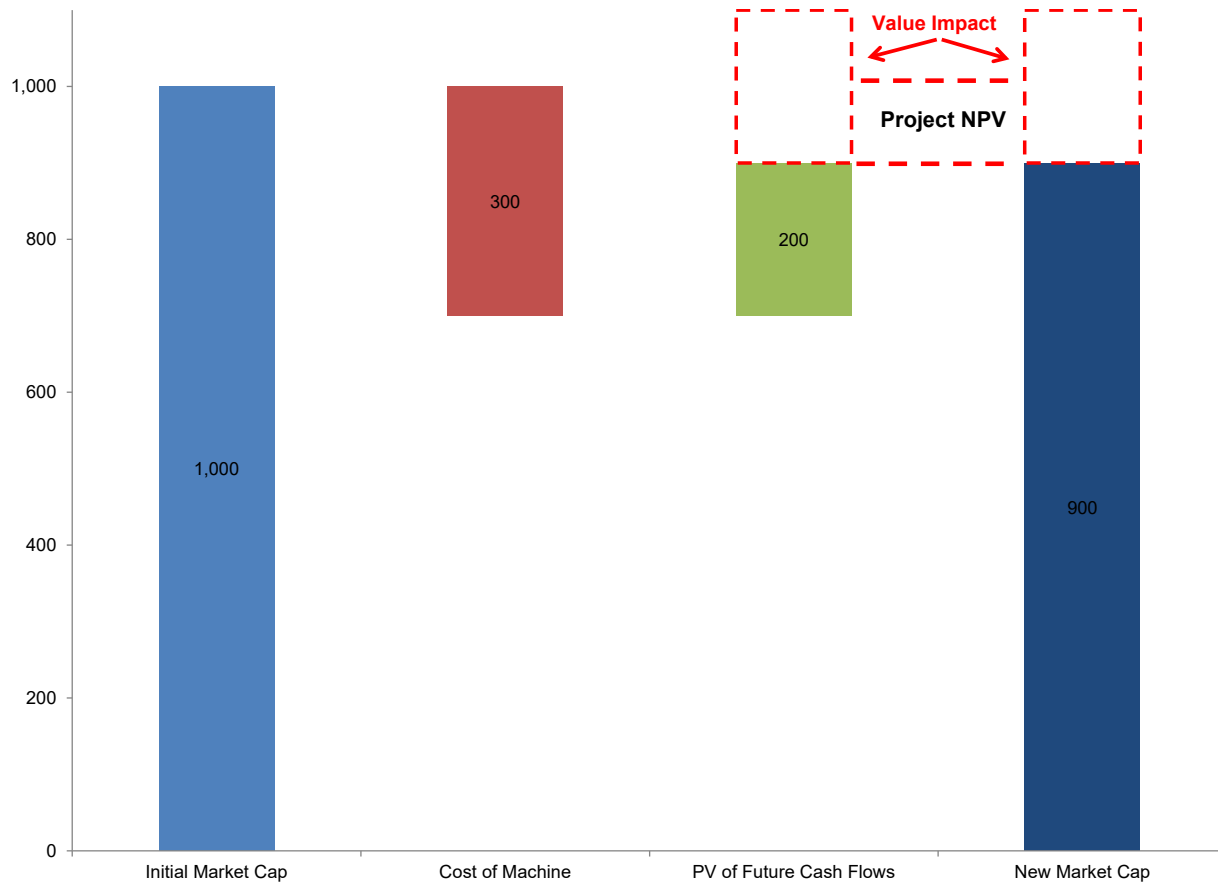
Confidential

Figure 2 – Impact of Value-Relevant Change

59. Figure 2 shows that a change in the expected future cash flows from the widget-making machine would reduce the value of the project as well as the market capitalization of Widget Co. A similar result would occur if the expected price of widgets dropped by half due to the introduction of new, high-speed widgets.

60. Other factors related to the widget-making machine may not affect the NPV of the project. Suppose, for example, that investors learn that the Chief Scientist is highly superstitious and insists on burning \$50 at the start of each project for good luck. Figure 3 below illustrates that this information would not change the NPV of the widget-making machine project or the market capitalization of Widget Co.

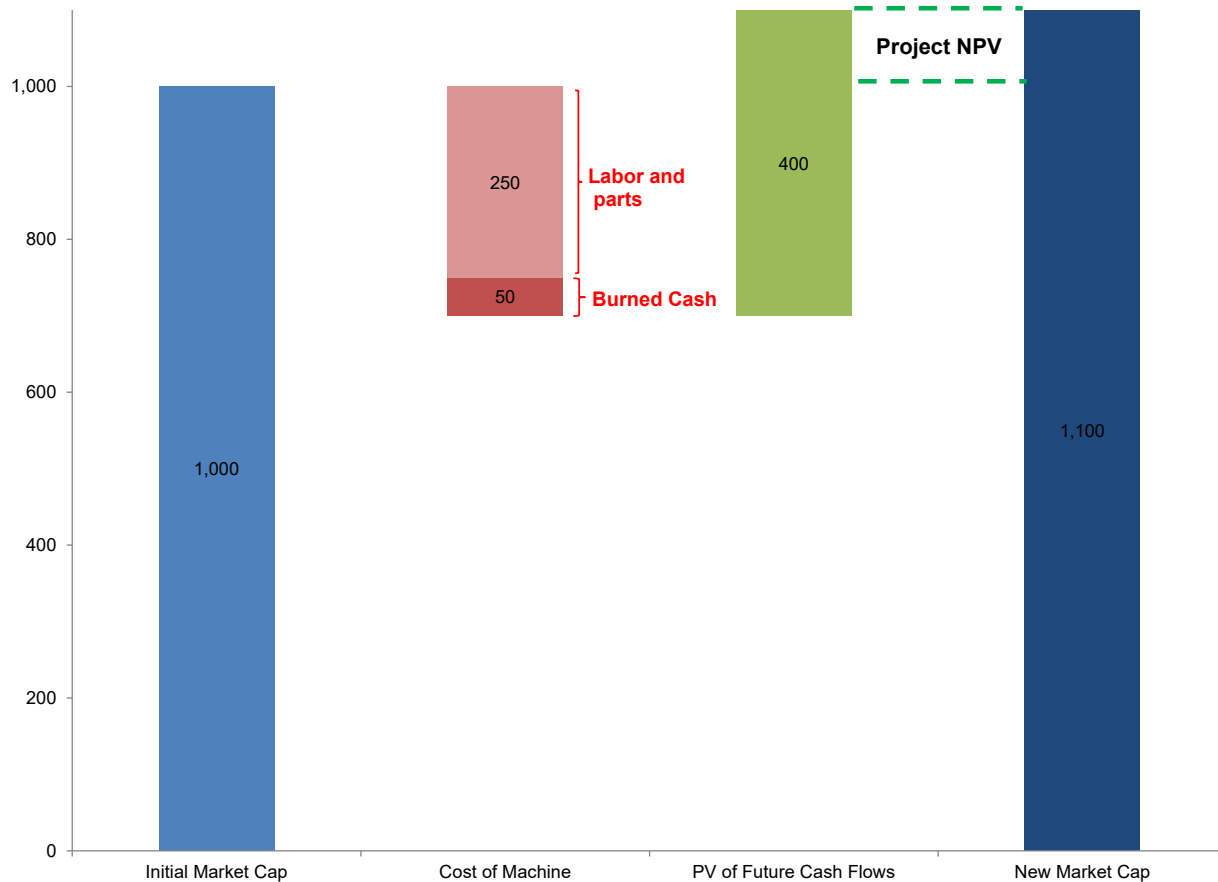
Confidential

Figure 3 – Impact of Non-Value-Relevant Change (Burned Cash)

61. As shown in Figure 3, the burned cash is included in the development cost of \$300. Although the \$50 is not being spent on the labor or parts necessary to manufacture the widget-making machine, it does not change the project's \$100 NPV. Widget Co. is still spending \$300 on a machine that will generate cash flows with a present value of \$400.

62. Suppose further that one of Widget Co.'s biggest competitors, Widgets International, independently develops an identical widget-making machine for \$200 (as compared to Widget Co.'s \$300 cost to develop the machine). Because the machines are identical, Widgets International also estimates a present value of \$400 in future cash flows from the machine making the NPV of its project \$200 (as compared to the NPV of Widget Co.'s project of \$100). As shown in Figure 4, the fact that Widget Co. overpaid for the same machine does not affect the NPV of the project to Widget Co. or its impact on Widget Co.'s market capitalization. Widget Co. still spent \$300 of cash on a machine that will generate a present value of \$400 in future cash

Confidential

flows. The NPV of the project is still \$100 and Widget Co.'s market capitalization is still \$1,100.

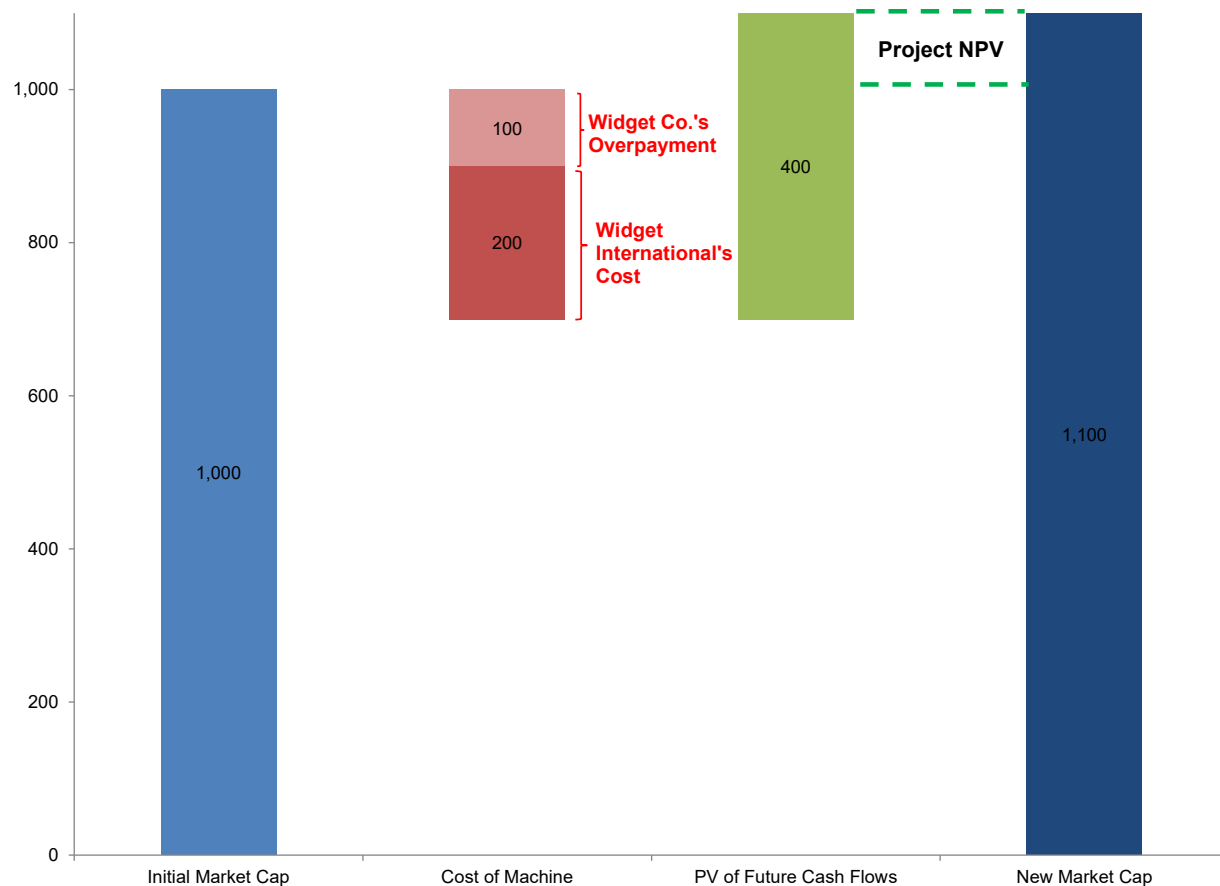


Figure 4 – Impact of Non-Value-Relevant Change (Overpayment)

63. It is important to understand why Numeric Disclosures in this litigation would not be material to valuation. The NPV of a project equals the present value of the future cash flows from a project minus the cash spent in connection with the project. In this litigation, the disclosure of the amount of bribes and any alleged overpayments is not required to compute the net present value of a project as the cash outflows made in connection with the project were known and do not depend on that information. The numeric disclosure only affects how the cash proceeds to the sellers of assets or providers of services are allocated by these sellers or providers. To see that this allocation is not value-relevant given the future cash flows from a project, it is useful to consider the following two examples more specific to a company like Petrobras.

64. In the first example, Oil Co. buys two refineries. Both refineries cost \$10 billion and have identical specifications with respect to production capacity, expected output, and so on. With respect to Refinery 1, 3% of the purchase price goes to improper kickback payments. With respect to Refinery 2, there are no such improper payments, but Oil Co. made some negotiating mistakes, which caused it to agree to pay 3% more than it could have. Once again, the purchase price for the two refineries is the same. The net present value of both projects is the same because the expected future cash flows are the same, and Oil Co. paid the same for both refineries. The fact that with respect to one refinery, Oil Co. did not disclose that part of the payment was allegedly used as a bribe does not change the value of that refinery. A subsequent corrective disclosure about the 3% improper payment would have no impact on the value of Refinery 1.

65. In the second example, Oil Co. buys Refinery 1 for \$10 billion. Once again, 3% of the purchase price goes to improper kickback payments. Suppose further that there exists a third Refinery owned by another company, which is identical to Refinery 1, but whose value—\$9.7 billion—is known to the market. In addition to determining the value of Refinery 1 on the basis of its own expected cash flows, the market could also use information about Refinery 3 in assessing the value of Refinery 1. In this case, the market will assess Refinery 1 at \$9.7 billion and will conclude that Oil Co. overpaid by \$300 million at the time of the acquisition. Any subsequent adjustment regarding the 3% would not correct any inflation because the market had already assessed the value of the refinery correctly.

66. Note that in both examples Oil Co. could eventually write off the value of Refinery 1 by 3%. The write-off would represent an adjustment to the carrying amount of the asset. However, in both examples the *economic* loss takes place when the refinery is acquired, and it is known by the market at that time, because the market knows exactly how much was paid for the refinery. Any eventual accounting adjustment to the recorded amount of PP&E is irrelevant to the economic value of Oil Co. because it does not provide any new value-relevant information to the market. In my examples, the write-offs cannot possibly eliminate inflation in the price of Oil Co. securities, because this inflation never existed.

67. It is important to note that it is not unusual for accounting adjustments to convey no new information to the market. A well-known academic study of write-offs concludes that “we

observe no significant reaction to write-offs of either goodwill or PP&E.”⁸⁶ An example of a large write-down that is not associated with an adverse stock return is by BHP Billiton. On January 15, 2016 global mining company BHP Billiton took an impairment charge on its American oil and gas assets by over 30%, or \$7.2 billion, due to a decline in global oil prices which had hit a 12 year low of \$30/bbl that same week.⁸⁷ BHP also announced that it would reduce the number of rigs it operated and review its investment plans for the remainder of the year. In the aftermath, BHP’s stock price gained 5% in intraday trading in Australia, improving from an 11 year low price.⁸⁸ For the full day, share price rose by a total of 1.3% compared to an increase in the market in Australia of 1.3%.⁸⁹

68. HP made a similar write down as the result of goodwill impairment. On the morning of August 8, 2012, HP announced an \$8 billion goodwill impairment on their \$13.9 billion Electronic Data Systems acquisition.⁹⁰ By the close of trading, HP’s stock price gained 2.4% on this day.⁹¹ The S&P 500 gained 0.09% while the NASDAQ lost 0.14% on this day.⁹² On February 24, 2016 Chesapeake Energy reported a \$14.9 billion loss for 2015, due, in part, to an \$18.2 billion asset write-down resulting from declines in oil prices. Chesapeake announced that it would cut up to 69% of its capital spending for 2016 and that it was working on debt.⁹³ Share prices rose by nearly 23% by the close of trading while the S&P 500 increased by 0.4%.⁹⁴

69. These write-downs were was a non-cash charges to the value of these companies assets. Hence, it had no direct impact on cash flows. Any cash flow impact from the declining price of oil would have been incorporated in the price of each company’s respective stock price.

⁸⁶ Jennifer Francis et al., “Causes and Effects of Discretionary Asset Write-Offs,” *Journal of Accounting Research* 34 Supplement, pp. 117-134.

⁸⁷ BHP Billiton Takes £5bn Writedown on US Oil Assets as Price Slump Takes Toll,” *The Guardian*, January 14, 2006, <https://www.theguardian.com/business/2016/jan/15/bhp-billiton-takes-5bn-writedown-on-us-oilassets-as-price-slump-takes-toll>.

⁸⁸ *Ibid.*

⁸⁹ Bloomberg. Returns are adjusted for the payment of dividends.

⁹⁰ “HP’s \$8 Billion Write Off Is Really Good News In Disguise,” *Business Insider*, August 8, 2014, <http://www.businessinsider.com/hps-8-billion-write-off-is-really-good-news-in-disguise-2012-8>.

⁹¹ Bloomberg. Returns are adjusted for the payment of dividends.

⁹² *Ibid.*

⁹³ Crooks, Ed, “Chesapeake to slash capital spending to conserve cash,” *Financial Times*, February 24, 2016, <https://next.ft.com/content/7cd48c26-db20-11e5-98fd-06d75973fe09>.

⁹⁴ Bloomberg. Returns are adjusted for the payment of dividends.

70. The accounting adjustments in this case are non-cash charges as well. They have no direct impact on the cash flows of the company.

71. To contrast the alleged fraud in this litigation with a more typical securities fraud, suppose that Oil Co. bought Refinery 1 in 2011 and disclosed that this refinery would have a technical innovation that would make it twice as efficient as any other refinery by 2016. Oil Co. refuses to disclose the technical details of the innovation but the market believes that it exists. From 2011 to 2014, the market learned nothing about this technical process and continued to believe that the innovation exists. In 2014, Oil Co. discloses, however, that there was no such innovation. In this case, the present value of the cash flows would be inflated from the time of the announcement in 2011, until the disclosure in 2014, because the market would factor the innovation into the valuation of the refinery. The alleged fraud in the Petrobras litigation is fundamentally different from this example because the alleged numeric misstatements had no impact on Petrobras's cash flows.

72. In sum, factors that do not affect the magnitude of a project's cash flows should not have an impact on the project's, or firm's, valuation, based on principles of corporate finance. A number of plaintiffs in the consolidated litigation have provided deposition testimony consistent with these fundamental principles of valuation, emphasizing the importance of a cash flow analysis:

- “If I had to pick one, yes, the free cash flow yield of a business is what primarily what we look at.”⁹⁵
- “And as you testified before, cash flows is the number one metric for you with respect to financials? / Yes.”⁹⁶
- “We focus on earnings and cash flow because, ultimately, we think the value of the securities is a reflection of the cash flow earnings and earnings potential of a company.”⁹⁷

⁹⁵ Reynolds 40:6-8

⁹⁶ Cortes 240:2-5

⁹⁷ Audet 45:23-46:4

Confidential

- “When it comes to credit analysis, what’s the significance of the cash flow of the company? / I would argue it’s paramount. . . . it’s one of the most important factors you’re going to analyze.”⁹⁸
- “When valuing a company’s assets, how does Logan Circle go about doing that. / We look at the assets a company has and their ability to generate cash./ And that’s the present ability to generate cash?/ Present and future.”⁹⁹
- “A. Like I said, cash flow is the key of determining the value of the company. Expectation of larger cash flow increases the value --expected value of the company.”¹⁰⁰

D. Market Information Regarding the Refineries at Issue

73. Petrobras provided the market with relevant information to assess the refineries at issue throughout the Class Period, including information about: capacity, timing of construction and operations, and anticipated cost of the projects. Exhibit 1 summarizes Petrobras’s disclosures with respect to the refineries at issue in this litigation. As shown in Exhibit 1, Petrobras provided the market with a wealth of value-relevant information with respect to the refineries before and throughout the Class Period.

74. In this section, I present and discuss, as an example, information that Petrobras provided to the market about the RNEST refinery.

75. Petrobras also issued five-year plans annually, detailing its capital expenditures, as well as annual guidance for capital expenditures. For instance, Petrobras released its 2012–2016 Business and Management Plan in June 2012.¹⁰¹

⁹⁸ Westhoff 170:18-25

⁹⁹ Moses 172: 19-2

¹⁰⁰ Sudol 152:17-20. See also Shale 81:19-22; Kimble 152-153; Pope 47:25, 48:1-7; McGann 52:9-53:14.

¹⁰¹ On June 14, 2012, Petrobras issued a 6-K announcing that its board had approved the 2012–2016 Business and Management Plan (“Plan”) and providing the market with some of the Plan’s details. See Petrobras, “2012–2016 Business Plan,” Form 6-K for the Month of June 2012, Filed on June 14, 2012. On June 25, 2012, Petrobras released a detailed presentation of the 2012–2016 Business Plan. See Petrobras Presentation, “2012–2016 Business and Management Plan: 2020 Petrobras Strategic Plan,” June 25, 2012 (“2012–2016 Plan”), <http://www.investidorpetrobras.com.br/en/presentations/business-management-plan>.

Confidential

76. The plan was 89 pages and provided detailed information on Petrobras's ongoing projects and capital expenditure plans. For example, the presentation provided information related to costs and delays at the RNEST refinery. It specified that RNEST would process 230 mbbbl/d of heavy oil and that 70% would be converted to diesel.¹⁰² The plan allowed investors to assess how estimated costs increased over time. As shown in Figure 5 from the 2012–2016 Business and Management Plan below, Petrobras also provided the market with information about the actual and expected costs related to the construction of RNEST. Figure 5 indicates that by June 2012, the total cost of RNEST was expected to reach \$17 billion, as compared to previous estimates of \$13 billion.

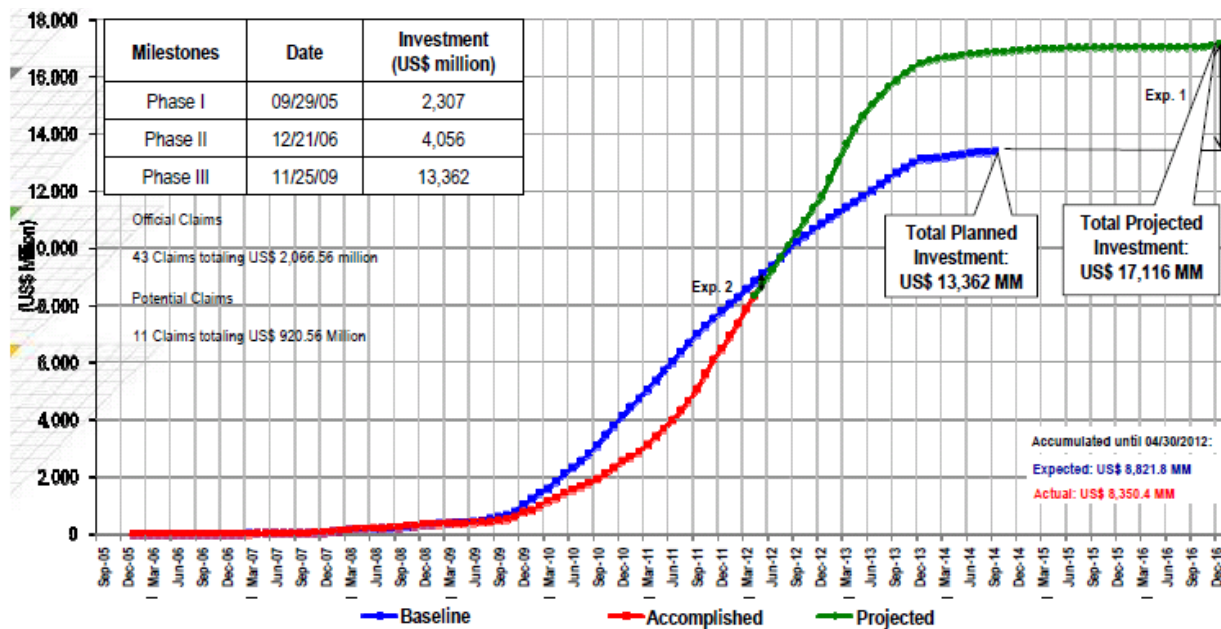


Figure 5: RNEST Cost S-Curve¹⁰³

77. Figure 6 below, which is taken from Petrobras's disclosed plan, compares actual progress in RNEST's construction to the company's plans through April 30, 2012.

¹⁰² 2012–2016 Plan, p. 78.

¹⁰³ 2012–2016 Business and Management Plan, p. 80.

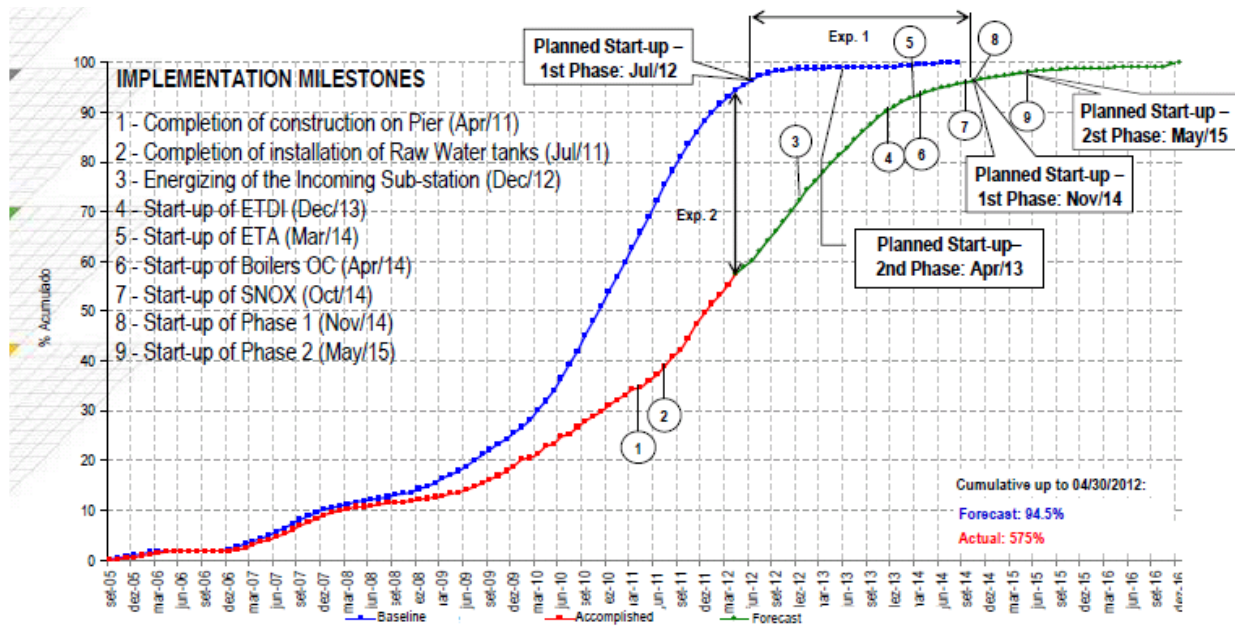
Confidential

Figure 6: RNEST Production S-Curve¹⁰⁴

E. Market Assessment of the Refineries at Issue

78. A review of analyst reports suggests that the market assessed the RNEST and Comperj refineries on the basis of variables affecting their cash flows and comparables rather than their book value. Therefore, any misrepresentations or omissions relating to the Numeric Disclosures could not have created any inflation because they did not provide the market with any value-relevant information about the cash inflows or outflows expected from the projects or the valuation of the comparables. Specifically, Numeric Disclosures alone would not have changed the magnitude of cash outflows, only how those outflows were allocated among various parties. Therefore, even if the Numeric Disclosures had been made at the time the alleged bribes were paid, they would not have impacted the market's assessment of the projects.

79. I found that in reports I reviewed, securities analysts discussed the contribution of individual refineries to the value of Petrobras using information available to the market or analysts, about variables affecting the cash flows from these refineries and about comparables. For instance, as Petrobras developed a new refinery, analysts were able to compare the cost of the refinery with the price of building a comparable refinery elsewhere in the world. Analysts

¹⁰⁴ 2012–2016 Business and Management Plan, p. 79.

could therefore assess whether the building of the refinery benefitted the providers of capital. In valuing Petrobras, the analysts reports I reviewed typically presented valuations of the Refining segment of Petrobras as a whole, which included all existing refineries, instead of providing valuations for individual refineries. However, reports I reviewed valued the Refining segment using the same principles of corporate finance.

80. In this section, I provide evidence of how analysts assessed the value of individual refineries. I will show that analysts often assessed the Refining segment at amounts that were a fraction of the book value of that segment or of the capital expenditures spent on that segment during the Class Period. In fact, in 2014, some analysts, such as Citi and Morgan Stanley, assigned a negative value to the Refining segment, which means that according to these analysts, the segment *subtracted* from the overall value of Petrobras, rather than added to it, despite the carrying amount for those assets reflected on Petrobras's balance sheet.¹⁰⁵

81. Early in the Class Period, on June 22, 2010, UBS analyzed Petrobras's publicly-released 2010–2014 Business Plan, and concluded based on the information released by Petrobras itself that the refinery investments would have low returns.¹⁰⁶ When investments have low returns, the NPV is low or negative. In this case, low returns means that Petrobras does not earn its cost of capital, such that value is destroyed by these investments. The report showed that the cost per capacity (after adjusting for complexity) was, at that time, twice as high for RNEST as for new refineries in Europe or the U.S. The report further states that:

- A key question also lies on the ROIC [return on invested capital] of the new refineries which already seem to start with high budget vs. international standards. We note that while PETROBRAS is investing US\$74bn in new refineries through 2014YE, the capacity addition is going to be about 904kbpd by 2014YE and a higher 1,389kbpd by 2020YE (...). In any of these scenarios, however, the estimated cost per unit of capacity increase already adjusted by its higher refining complexity suggests that PETROBRAS will likely have low returns on these investments, both on the cost side (=20%-100% higher unit costs) and selling price side (limited

¹⁰⁵ Petrobras (PBR): Positive Q4 Expected, but Short Term Events Impact Performance," Citi, 1/January 21; MS, 6/, 2014; "Petrobras: More Barrels a Negative Surprise; Moving to Equal-weight on Limited Upside," Morgan Stanley, June 24, 2014.

¹⁰⁶ Petrobras (ON): 2010-14 Business Plan Call Highlights," UBS, June 22, 2010, p. 5.

Confidential

ability to increase prices given competition of gasoline and diesel vs. ethanol).¹⁰⁷

82. Two days later, Barclays concluded based on the same information that “We now think the company may end up spending more than \$150 bn in the Brazilian refining sector over the next 10 years, which may generate only mid-single digit return.”¹⁰⁸ At the time, the cost of capital of Petrobras was close to 10%.¹⁰⁹ Consequently, effectively, Barclays stated that minority investors could anticipate a loss of about 5% a year on these investments. Barclays also pointed out that the cost of the refineries per unit of capacity was more than twice the cost of recent refineries in the U.S. and in Saudi Arabia.¹¹⁰

83. In November, UBS had refined its thinking about RNEST, stating that “We currently estimate this refinery will yield [app.] 3% return in nominal US\$ terms, which is clearly below the company’s cost of capital.”¹¹¹ In other terms, UBS believed that the refinery was worth substantially less than its cost, since UBS assumed that Petrobras’s cost of capital at that time was 10%.¹¹²

84. As discussed, the deposition testimony of Plaintiffs and their investment advisors in this the consolidated litigation makes clear that they evaluated Petrobras according to the same basic principles of valuation. Relatedly, the deposition testimony makes clear that Plaintiffs and their investment advisors did not value a company based on the book value of its PP&E, either because it was not part of the DCF analysis, or because historical cost was simply not relevant to valuation:

- “. . . book value of assets is kind of backward looking . . . we don’t rely on it heavily . . . it’s not current market . . . it’s inherently very volatile and unreliable / companies have a tendency to overstate their PP&E or their assets.”¹¹³

¹⁰⁷ “Petrobras (ON): 2010-14 Business Plan Analysis – Negative,” Call Highlights,” UBS, June 22, 2010, p. 6.

¹⁰⁸ PETROBRAS 2010-2014 BUSINESS PLAN : Refining - A Tough Sell,” Barclays Capital, June 24, 2010, p. 4.

¹⁰⁹ See “Lowering PT on short-term concerns and higher capex,” Deutsche Bank, June 30, 2010, p. 1.

¹¹⁰ Barclays Capital, “PETROBRAS 2010-2014 BUSINESS PLAN

Refining - A Tough Sell,” June 24, 2010, p.8.

¹¹¹ Petrobras (ON): Meeting Downstream – Reiterate Neutral,” UBS, November 2, 2010..

¹¹² Ibid., p. 1.

¹¹³ Thompson 130:135-136

Confidential

- (discussing valuation metrics) “Do any of them use as an input property -- a historical recorded amount of property, plant and equipment? No, not as an input.”¹¹⁴
- Similarly, Steven Saruwatari of Western Asset discussed discounted cash flow analysis and explained that PP&E did not play into it: “Q. Do you have a general understanding of whether the book value of Petrobras' property, plant and equipment would have been an element in the discounted cash flow analysis? A. Discounted cash flow is exactly that. It uses the stream of cash flows related to an asset and discounts them to present value. And cash flows are based on – are based on cash flows. Q. So the past expenditures on property, plant and equipment would not be relevant to a calculation of future discounted cash flows? A. Yeah, I think that's the way a discounted cash flow analysis works.”¹¹⁵

85. Certain deponents have even testified that an overstatement of PP&E would not be material:

- “Q. An overstatement of PP&E is not necessarily material to your investment decision? A. No, it's not material, we just want to know what it is.”¹¹⁶
- Damien McCann echoes this same sentiment in his deposition testimony and goes on to testify that a restatement of PPE would not be significant because it would not impact cash flows: “Q. a noncash restatement of PP and E in the twenties of billions would not be significant because it would not impact the ability of existing assets to generate cash and service debt. A. Correct.”¹¹⁷

86. The deposition testimony also shows that, like equity analysts and in a way consistent with basic finance principles, Plaintiffs and the investment advisors in this matter conducted their own analyses on the refineries at issue and did not simply take the reported book value as their measure of value. Not only were plaintiffs and their investment advisors aware of cost overruns and delays¹¹⁸ with respect to Petrobras's large under-construction refineries, they were concerned about these overruns and delays:

¹¹⁴ Holley 152: 6-9

¹¹⁵ Saruwatari 151-152.

¹¹⁶ Thompson 136:13-16.

¹¹⁷ McCann 191:3-8.

¹¹⁸ See, e.g. Shaw 71-72; Holley 263:20-24; Westhoff 188:1-4; Segovia 91:7-92:2; McGann 277:11 – 278:1; and Batchman 222:2-6; 235:15-18.

- For example, William Kennett of Washington State Investment Board described cost overruns as “the biggest negative about the company at the time.”¹¹⁹
- According to Meg Reynolds of Westwood Global Investments, Westwood was particularly aware of the “excessively high” costs of RNEST: “Q. (re RNEST) Westwood was aware of that increase at the time? A. Yes. Q. And Westwood was concerned about that time? A. Yes. Q. Westwood thought that the \$12 billion figure was excessively high for RNEST, right? A. Yes.”¹²⁰
- Chris Shale of Universities Superannuation Scheme was asked: “Were you concerned about the cost overruns in this refinery?” He replied, “Yes.”¹²¹

VI. Plaintiffs’ Damages Model With Respect to Non-Numerical Disclosures is Untenable

87. According to Plaintiffs’ allegations, Non-Numeric Disclosures would have informed the market of the risk that Petrobras’s internal controls were not effective in preventing certain of its employees from engaging in corruption, and according to Plaintiffs, the drop in Petrobras’s share price resulting from the Non-Numeric Disclosures is a measure of the prior inflation in the share price, and of the damages to which they are entitled. I disagree.

88. First, I disagree with Dr. Nye that the Non-Numeric Disclosures revealed an entirely unknown, new, and undisclosed risk that the Company’s internal controls were not effective in preventing certain of its employees from overriding those controls, and engaging in corruption. Throughout the Class Period, Petrobras disclosed that its internal controls had inherent limitations and were no guarantee that the Company would detect or prevent all actions inconsistent with those controls.

89. For example, in its 2010 20-F, the Company noted that there were: “inherent limitations to the effectiveness of any system of disclosure controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures.”¹ Petrobras made similar disclosures in each of its Forms 20-Fs filed throughout the Class Period. In other

¹¹⁹ Kennett 275:3-4.

¹²⁰ Reynolds 161:2-10.

¹²¹ Shale 139:22-24. See, e.g. McCann 167:11-168:10; 168:14-22; Barry 155-56; and Batchman 236:13-15.

words, the risk regarding the limitations of Petrobras's internal controls was fully disclosed, but Dr. Nye completely ignores whether and to what extent investors considered this disclosed risk in their investment decision-making process.

90. Dr. Nye also fails to factor into his analysis the level of corruption risk in Brazil. Studies show that investors routinely take into account the risks associates with investing in a particular country, and that would have been no different here.¹²²

91. This risk in Brazil was discussed in analyst reports and news articles and measured by public indices. For example:

- According to the World Bank, in 2014, 56% of the countries in the world controlled corruption better than Brazil.¹²³ Brazil's ranking was only marginally better in 2009, when 44% of the countries in the world controlled corruption better than Brazil.¹²⁴
- A June 2001 Foreign Investment Advisory Service report on Brazil discussed the main risks of investing there.¹²⁵ The report discussed "custo Brazil," or the "Brazilian cost," which refers to problems that exist in Brazil which make it costly and risky to operate a business. According to this report, these factors include bureaucratic inefficiencies and "corruption, on a grand scale."¹²⁶
- A 2012 KPMG report addressed the presence of corruption in Brazil:
 - Corruption is not uncommon in both the government and business. Despite several efforts to improve the situation, bribes and embezzlement

¹²² See e.g. Pinkowitz et al. (2006), which finds that firms that operate in countries where the risk of corruption is higher are valued significantly less than firms that operate in countries where the risk of corruption is lower.

¹²³ World Bank Worldwide Governance Indicators (WGI) Project data
<http://info.worldbank.org/governance/wgi/index.aspx#home>.

¹²⁴ World Bank Worldwide Governance Indicators (WGI) Project data
<http://info.worldbank.org/governance/wgi/index.aspx#home>.

¹²⁵ http://czbrcham.org/yahoo_site_admin/assets/docs/PUBBrazilReportVolII.2525055.pdf

¹²⁶ http://czbrcham.org/yahoo_site_admin/assets/docs/PUBBrazilReportVolIII.2525055.pdf

are still common and accepted by society in general as the price of doing business.¹²⁷

- On October 1, 2014, Dow Jones International News released an article citing a recent World Bank survey showing that 67% of companies noted that corruption was an obstacle to doing business in Brazil, putting Brazil behind other emerging market nations.¹²⁸

92. Plaintiffs and investment advisors in this case have also testified that they recognized and factored into their investment decision the risk associated with investing in an emerging market such as Brazil. For example:

- ". . . with all due respect to all the Latin Americans, it's Brazil. It's not a region which is unknown to these kind of behaviors."¹²⁹
- "Q: Despite the political risks, exchange rate fluctuation, risk of corruption, the analysis showed it was worth it, right? . . . A: We invested, while acknowledging the risk."¹³⁰
- "Q: So prior to Lava Jato, there's a perception that Brazilians were -- there was a corrupt system in Brazil? A: Yes."¹³¹

93. Second, Dr. Nye offers no analytic method or model for measuring the extent to which this risk was already priced into Petrobras' share price during the Class Period. This is critical for Plaintiffs' theory of recovery,

94. Even if the risk was undisclosed, under Plaintiffs' materialization of risk theory, the inflation that they must measure, in order to recover damages with respect to Non-Numeric Disclosures, is the adjustment that the market would have made had it known of the risk that was

¹²⁷ KPMG, *Investing in Brazil: 'A Land of Opportunities,'* at 11 (Nov. 2012), <https://www.kpmg.com/NL/nl/IssuesAndInsights/ArticlesPublications/Documents/PDF/High-Growth-Markets/Investing-in-Brazil-2012.pdf>.

¹²⁸ Gerald Jeffris, Brazil Mulls Ways to Break Corruption, Shake a Bad Rap, Dow Jones International News (Oct. 1, 2004).

¹²⁹ Soeberg 126:13-15

¹³⁰ Westhoff 210:10-14

¹³¹ Kimble 137:12-17

allegedly not disclosed during the Class Period. However, price reaction following the Non-Numeric Disclosures in this case cannot be used as a measure of prior inflation caused by the failure to disclose such risks, because the price reaction here reveals not exclusively that adjustment, but also includes the contemporaneous impact of the materialization of the underlying risk.

95. To present a simple example, suppose shares of Company A trade at \$10 per share. Further, suppose that Company A becomes exposed to a new risk that could adversely affect the company's cash flows in the future. In the first example, Company A discloses this risk to the market which expects a potential loss of 10% if the risk materializes. The market assesses the probability of the risk materializing at 50%. In this example, the stock price of Company A will be discounted by 5% ($10\% \times 50\%$), to trade at \$9.50, due to this known risk. Note that the ultimate materialization of the risk may be different from the market's ex ante expectation. For example, Company A may experience a \$2 per share decline upon materialization of the risk. This does not represent a new risk, but rather a difference between materialization and the market's expectations. Similarly, the materialization of the risk may turn out to be only \$0.01, in which case the market would be positively surprised, as it expected worse. Now suppose that it turns out that part of the \$2 stock price decline was due to a previously undisclosed risk. The \$2 stock price decline cannot be used to measure the inflation caused by not disclosing the risk. This price drop says nothing about the inflation due to the lack of disclosure, because the stock-price drop is not a measure of ex-ante inflation. To show inflation from the disclosure, it would be necessary to show: (1) that ex-ante, the stock price did not reflect that risk, and (2) what the expected loss would have been had the market been aware of that risk. An event study addresses neither of these issues, as it shows the commingled impact of both the disclosure and the underlying impact of the materialization of the risk.

96. Hence, no reliable conclusion about inflation can be reached from just knowing the fraction of the abnormal return due to the allegedly unknown risk. To measure inflation, one has to know what the market would have charged to bear that risk.

97. In sum, Dr. Nye's model does not account for whether and to what extent the risk that the Non-Numeric Disclosures revealed was already priced into the price of Petrobras securities during the Class Period.

VII. Factors Unrelated to the Alleged Fraud Drove Down the Price of Petrobras Securities

98. The Class Period starts on January 22, 2010 and ends on July 28, 2015. On January 22, 2010, the price of the Petrobras common ADS was \$42.02. By July 28, 2015, the price had fallen to \$5.78. However, almost all of the decline in the stock price occurred before the first alleged corrective disclosure identified by Plaintiffs' experts. The first corrective disclosure identified by those experts was on October 16, 2014. On that day, the stock price was \$14.93. Therefore, from the start of the class period to the first alleged corrective disclosure the stock price dropped by 64.49%, which represents 74.75% of the total drop over the class period.

99. A number of factors unrelated to the alleged fraud contributed to this decline. These factors, which I understand are discussed in greater detail in the Expert Report of Christopher James ("James Report"), include, but are by no means limited to: (1) changes in oil prices; (2) changes in macroeconomic factors including the economic performance of Brazil, exchange rate for the Real, and the yield on Brazil's sovereign debt; and (3) the impact on Petrobras and its minority shareholders of the actions of its controlling investor concerning capital expenditures, pricing, procurement of materials and services, and (4) the impact of Petrobras' increasing leverage.

100. In my opinion, the price drops that occurred after the alleged corrective disclosures were caused (in whole or in part) by the same factors, rather than the revelation of the alleged fraud.

A. Implications of changes in oil prices

101. The price of oil increased early in the Class Period and remained high until the middle of 2014. The high prices caused Petrobras to lose tens of billions of dollars of potential revenue due to the fact that its controlling shareholders did not let it sell its products at market prices.

However, oil prices experienced a dramatic drop in in the second half of 2014. While those declines helped Petrobras's cash flows, they also meant that that it became increasingly likely that many of its production fields would become unprofitable because the oil price became too low relative to its cost. In particular, the vast pre-salt reserves became much less likely to be economically valuable as prices plummeted.

102. Analysts routinely recognized the impact of oil prices on Petrobras's valuation through the class period, often considering the company's valuation based on optimistic scenarios (with higher oil prices) and pessimistic scenarios (with lower oil prices). However, even the pessimistic scenarios did not envision oil prices falling as low as they did in late 2014 and early 2015:

- In 2012, UBS presented a DCF-based valuation sensitivity matrix with long-term oil prices from 2013 onwards.¹³² The benchmark case assumes oil prices of \$95 per barrel from 2013 onward and a cost of equity of 11.2%. The report sets a \$36.50 price target based on these assumptions.¹³³ The sensitivity matrix uses a range of oil prices from \$75 to \$115 per barrel and cost of equity ranging from 9.2% to 13.2% to value Petrobras ADS at \$20 to \$61 per share.¹³⁴
- On October 29, 2013, Barclays published a report with a price target of USD\$20. In that report, it looked at downside case with an oil price of USD\$70. For that downside case, it expected the stock price to be USD\$11.¹³⁵
- On June 24, 2014, Morgan Stanley has a base case price target of USD\$16 which assumes an oil price of USD\$103. It has a bear case price target of USD\$9.8 which assumes an oil price of USD\$90 for 2014 and a long-term price of USD\$75.¹³⁶

103. By the end of 2014, oil prices were below USD\$50, which was lower than any of these estimates. The valuations I have seen from analysts during the 2010 to early 2014 period imply that the price of Petrobras shares would have been in single digits with oil prices below \$50. For example, in 2014, Morgan Stanley stated with respect to the value of Petrobras's shares that, if retail prices were to follow world prices, "Each \$5/bbl reduction in LT prices lowers our upstream NAV by \$17.5B, or [approximately] \$2.7/ADR."¹³⁷ In the second half of 2014, the oil price fell by more than \$50. The highest stock price in the second half of 2014 was slightly more

¹³² UBS, "Delays in production and refinery start-ups," April 5, 2012, p. 6.

¹³³ UBS, "Delays in production and refinery start-ups," April 5, 2012, p. 1.

¹³⁴ UBS, "Delays in production and refinery start-ups," April 5, 2012, p. 6.

¹³⁵ Barclays, "Still Early Days on Pricing Mechanism," October 29, 2013, p. 3.

¹³⁶ Morgan Stanley, "More Barrels a Negative Surprise; Moving to Equal-weight on Limited Upside," June 24, 2014, p. 2.

¹³⁷ Morgan Stanley, "PBR & 85/bbl Oil? A Good Short-Term Combination at the Current (Lack of) Fuel Price Policy," October 14, 2014, p. 1. 10/14/2014.

than \$20. Using the Morgan Stanley analyst estimate of the impact of a drop in the oil price, the price at the end of the year would be less than \$8. On the last day of the year, the stock price was \$7.30.

104. Therefore, the sharp decline in oil prices was a significant factor in decreasing Petrobras's share price at the time of the corrective disclosures. Deposition testimony makes very clear that investors considered the price of oil to be a fundamental determinant of the value of Petrobras, both before and after the corrective disclosures:

- “And those ups and downs in the price of oil had an impact on the price of Petrobras’ shares during that period? / Yes.”¹³⁸
- “And what's the most important metric for the intrinsic value of a company? / Generally, their product.”¹³⁹
- “Of course that was happening against a backdrop for a good portion of that period of weak oil prices and so forth. So it's hard to disentangle those.”¹⁴⁰
- “I mean, it’s an oil company. So if the price of oil is moving up or moving down . . . it’s reasonable to assume that the shares would react to that in the market.”¹⁴¹
- “Q: Why was [the oil price] relevant to your analysis? . . . A: Because it drives the revenue and profitability of the business. Q: So oil prices were a factor when you valued Petrobras? A: Yes. Q: and they affected Petrobras’s security prices? A. Of course.”¹⁴²

B. Implications of Other Factors Unrelated to the Alleged Fraud

105. In addition to oil prices, a number of other factors unrelated to the alleged fraud caused declines in Petrobras’s share price during the Class Period, both before and after the alleged corrective disclosures, including the overall economic performance of Brazil, exchange rates, and yields on sovereign debt.

¹³⁸ Reynolds 46:2-5.

¹³⁹ Cortes 173:12-16.

¹⁴⁰ Anderson 79:9-12.

¹⁴¹ Audet 108:13-20.

¹⁴² Tishin (rough) 98:5; 98:8-15. See, e.g. Kennett 175:14;19-20; Luchsinger 143:21-22; Audet 122:8-21; Xiao 90:20-24; 85:13-15; Westhoff 184:3-5; Moses 89: 18-20; Sudol 223:19-22; McGann 229:3-17; Tishin (rough) 125: 15-16; 125:20-21; and 133:3- 23.

106. These factors, which I understand are described fully in the James Report, include the stagnation of the Brazilian economy (caused by, among other things, the reversal of the commodities boom, slowed growth of importers of Brazilian goods, and failure to address structural issues), the weakening of the Brazilian Real (which analysts noted generally had a negative impact on Petrobras,¹⁴³ considering its debt was denominated in U.S. dollars while its revenues were denominated in Brazilian Reals), and increased yield in sovereign debt. Investors were fully aware of the import of all of these factors.

107. One additional important factor is worth mentioning, is the impact of the actions taken by the Brazilian government as the controlling shareholder of Petrobras. In particular, the Brazilian government set prices for the products sold by the refineries that were below world prices for much of the Relevant Period and forced Petrobras to use domestic suppliers when it could have used cheaper foreign suppliers. The government's actions, policies, and in some instances pure interference had negative impacts on Petrobras throughout the Class Period. As a result of this negative impact, Petrobras had a much weaker cash flow, was forced to borrow more, and had a stretched balance sheet by the time of the alleged curative disclosures. The analyst reports I have seen show that investors were keenly aware of the role of the state and of the negative impact of some of its policies and actions on Petrobras. I understand that the James report addresses these issues in greater detail.

108. Plaintiffs and their investment advisors were keenly aware of the impact of government ownership and interference, as well:

- “Q: And how was the [Dilma] government very intervening? A: It tried to regulate the price that the company can charge. And also ask the company to use only local content equipment.”¹⁴⁴
- “Q: And this [government] interference with the ability to – to price its downstream oil, did that – that hurt Petrobras financially? A: Yes. Q: And as a result, did that hurt the value of Petrobras securities? A: Yes.”¹⁴⁵

¹⁴³ Deposition testimony also makes clear that Plaintiffs and their investment advisors appreciated this risk: Moses 89: 18-25; 90: 2-5; Xiao 198; Cortes 257:21-25; Barry 53; Galindo, 225: 11-12; and Bruebaker 125:24 – 126:4.

¹⁴⁴ Xiao 197.

¹⁴⁵ McCann 102:20-103:3.

- “A: The president – the CEO of Petrobras was chosen by the president of the country, for example, and so -- and the pricing policy of the company is constrained sometimes. They're not able to raise prices during periods of inflation.”¹⁴⁶
- “A: That view takes into account that in some instances there are conflicting interests between . . . what the government desires as a majority shareholder in the company and what the company’s management, for example, might like to do”¹⁴⁷
- “A: So they were losing a lot of money in refining, right, and so that was basically keeping product pricing depressed to subsidize consumers. So that wasn't in the interest of minority shareholders, but I guess it was the interest of the Brazilian government, so yeah, that's kind of a big risk, right? Q: And that was a risk throughout at least 2013 to the end of 2015? A: Yeah. I mean, it kept resurfacing, but, you know, it's kind of -- the risk got smaller and bigger throughout, right, and that's a little bit why the spare price went up and down sometimes, so”¹⁴⁸
- “A: I started feeling [in 2011] that the government involvement in Petrobras might be a more negative impact than I originally thought”¹⁴⁹
- “Q: Are there risks specific to investing in state owned or controlled companies? A: Yes. Q: What are examples of such risks? A: Intervention by the government and influence by the government for the benefit of, you know, political or economic purposes in contrast to the benefit of underlying shareholders.”¹⁵⁰
- “A: In the specific case of Petrobras, I do remember a conversation with managers at some point in the relevant period about some investments made in some region of the country that was poor, and perhaps more with the objective of helping that region rather than maximizing shareholders -- shareholders' value. I think that was -- that was reflected at some point in the price as well.”¹⁵¹

¹⁴⁶ Reynolds 73:25, 74:1-6.

¹⁴⁷ Barry 85:12-17.

¹⁴⁸ McGann 65:19-66:7.

¹⁴⁹ Tishin (rough) 136:17-19.

¹⁵⁰ Petryk 124:413.

¹⁵¹ Galindo: 285:23-286:7.

- “Q: What was the importance of the Brazilian government ownership? A: The Brazilian -- the Brazilian government effectively controlled the company. It -- through control over gasoline price policies. It influenced capital expenditures. It also influenced the company through local content rules, through its oversight of that, and, at times, was a source of capital, like in 2010, through the equity injection.”¹⁵²

VIII. Plaintiffs’ Experts Fail to Show How Petrobras’s Alleged Omissions or Misstatements Inflated the Price of Its Securities

A. Responses to Dr. Nye

1. Overview of Dr. Nye’s Opinions

109. In his expert report in this matter, Dr. Blaine Nye opines that the price of Petrobras securities was inflated during the Class Period because Petrobras did not make Numeric Disclosures or Non-Numeric Disclosures. For example, Dr. Nye states that the amount of bribes paid, risks inherent in the bribery and corruption scheme, and misstated financials resulted in inflation:

- It would have been materially important to investors to know the Company’s true losses from corruption, to know the risks inherent in the massive corruption scheme, and to know that Petrobras press releases, financial statements, regulatory filings, and other statements made by the Defendants concerning Petrobras during the Class Period, were false and misleading.

The material misrepresentations and omissions in Defendants’ public statements and Petrobras’ financial statements caused the prices of the Petrobras ADSs and Notes to be artificially inflated during the Class Period.¹⁵³

110. With respect to the risks related to the alleged bribery scheme, Dr. Nye also states that a:

¹⁵² Bosner 88: 10-18. See also, Chi 24:12-25; 243:5-9; 243:20-21; Crimmins 151-152; Lin 145:19-22; Hughes 112:2-11; Moses 92:15-21; Sudol 215:10-216:5; Pope 49:6-17; Cortes 223:24-25, 224:1-7; McGann 59:8-18; 124:8 – 125:16; Tishin (rough) 80:17-81:18; 100:13-19; 134:17-135:20; Petryk 124:4-125; Galindo: 290:7-20; Chi: 27:19-23; 83:5-10; 155:18-21; 228:16-19; 6-10; Lima 97:7-17; and Bosner 93:8-16.

¹⁵³ Nye Report pp. 8–9, ¶¶10–11.

Confidential

- ...reasonable investor would have wanted to know the information misrepresented and/or omitted by Defendants about bribery, embezzlement, money laundering, inflated contracts, and kickbacks to politicians as well as to political parties and government officials, involving Petrobras during the Class Period, and the risks which would materialize if the scheme were revealed.¹⁵⁴

111. Dr. Nye also opines that Plaintiffs were damaged because the alleged corruption scheme “drained” Petrobras of cash and resulted in a liquidity crisis. For example, he states that the alleged bribery scheme cost the company billions of dollars which delayed Petrobras’s financials and hurt its liquidity position:

- Had corruption not drained billions of dollars from the Company’s coffers, and put many key contractors at risk of being banned from operation, the Company would have been in a substantially better liquidity position, which would have supported its ability to maintain capital expenditures and long-term production growth. Thus, Petrobras’ delayed audited financials, its subsequent liquidity crisis, the sudden loss of its cartel of principal contractors, and their resulting impact on Petrobras’ capital expenditure program and production curve, were ramifications of the fraud that informed the market about the true scale of the corruption scheme, and in turn damaged Class members.¹⁵⁵

112. Dr. Nye also suggests that had Petrobras retained the cash that it paid out in bribes:

- its credit risk would have been lower and its operations would have been less exposed to the liquidity concerns that adversely affected [Petrobras’s] capital expenditure program, production growth and profitability toward the end of the Class Period.¹⁵⁶

113. In making these assessments, Dr. Nye ignores that Petrobras’s balance sheet became stretched primarily because of: (1) extremely large losses due to price caps, which resulted from the evolution of oil prices and the exchange rate, (2) extremely large investment programs that

¹⁵⁴ Nye Report, pp. 7–8, ¶9.

¹⁵⁵ Nye Report, pp. 22–23, ¶34.

¹⁵⁶ Nye report, p. 13, ¶24.

the Company financed with debt, (3) local content laws that increased its costs, and (4) the Company's inability to increase production.

114. Further, Dr. Nye states that the delay in the issuance of Petrobras's 2014 audited financial statements, as a result of the bribery and corruption scheme:

- prevented Petrobras from accessing international debt markets...putting [Petrobras] into a liquidity crisis overnight that adversely affected [Petrobras's] ability to fund its capital expenditure program, and in turn lowered production growth and profitability.¹⁵⁷

2. Omissions or Misstatements Related to Numeric Disclosures Could Not Have Inflated the Price of Petrobras Securities

115. As I have discussed, Petrobras provided the market with information about the amount of cash being spent in its capital budget program. Any alleged corrective disclosure by Petrobras would not change the amount of cash the company had spent, but rather would provide the market with information about how that cash was allocated among various parties once it had left Petrobras, how it was accounted for by Petrobras, and the extent of overpayments attributable to bribes involved in the contracts at issue. As I showed in my discussion of valuation principles, this information could not have been value-relevant to investors and would not have affected the price of Petrobras securities. Therefore, any omissions or misstatements related to the Numeric Disclosures could not have caused inflation. Dr. Nye fails to establish how these omissions or misstatements would have created inflation.

3. Dr. Nye's Damages Model With Respect to Non-Numerical Disclosures is Untenable

116. Dr. Nye opines that Petrobras misled investors about the risks that would materialize if the alleged bribery and corruption scheme were revealed. However, Dr. Nye fails to show how omissions or misrepresentations with respect to these risks would have created inflation in the price of Petrobras securities, as well as what portion of any decline was related to the allegedly

¹⁵⁷ Nye Report, p. 20, ¶32.

materialized risk rather than related to any other factor that could account for the decline, in whole or in part.

4. Dr. Nye's Opinions Regarding Liquidity Are Unrelated to Plaintiffs' Allegations

117. Dr. Nye's opinions with respect to Petrobras's liquidity are unrelated to Plaintiffs' allegations and irrelevant for purposes of showing inflation in Petrobras's securities' prices. Dr. Nye opines that the alleged bribery and corruption scheme caused Petrobras to pay billions of dollars in bribes that otherwise would have stayed with the company. According to Dr. Nye, lacking these funds, Petrobras ultimately experienced liquidity issues that hurt investors.

118. However, Dr. Nye fails to show how Petrobras's liquidity issues were caused by Plaintiffs alleged omissions or misstatements and how they would have led to inflation in the price of Petrobras securities. He provides no evidence that the company's liquidity would have been different had Petrobras made the Numeric Disclosures and Non-Numeric Disclosures. By themselves, these Disclosures would not affected the amount of cash that Petrobras spent during the Class Period or its liquidity position towards the end of the Class Period. Petrobras's liquidity position was a function of the cash that it spent – which was accurately disclosed – and not how that cash was allocated by those to whom it was paid. He ignores that the behavior of oil prices, of the exchange rate, and of the sovereign yield worsened the liquidity of Petrobras. Further, Dr. Nye fails to show how liquidity issues would have caused inflation in the price of Petrobras securities.

B. Responses to Prof. Feinstein

1. Overview of Prof. Feinstein's Opinions

119. Professor Steven Feinstein submitted three reports in this matter on behalf of individual Plaintiffs. In his reports, Prof. Feinstein opines that alleged omissions and misrepresentations with respect to the Numeric Disclosures and Non-Numeric Disclosures caused inflation in the price of Petrobras securities.

120. According to Prof. Feinstein's reports, Petrobras's alleged misrepresentations and omissions about the timing, costs, and prospects of the Comperj and RNEST refineries led to artificial inflation in the price of Petrobras securities:

- According to Plaintiffs, over the course of the Relevant Period, the alleged misrepresentations and omissions about, among other things, the state and prospects of the Company's CapEx projects, including the timing, costs, and prospects of the COMPERJ and RNEST refinery projects, and the bribery and overpayment scheme, caused the price of the Petrobras Securities to be artificially inflated. When the market learned of the extent of the corruption, the artificial inflation in the price of the Petrobras Securities dissipated, causing the stock price to fall, and thereby causing the Plaintiff to suffer losses.¹⁵⁸

121. Specifically, Prof. Feinstein argues that the reasons given for the increased time and cost to complete the Comperj and RNEST refineries misled investors about the condition of the projects and, in turn, misled investors about the future revenue, earnings and cash flow that Petrobras would generate:

- The alleged misrepresentations and omissions misled investors about the condition and prospects of the Company's CapEx projects. These alleged misrepresentations and omission included the reasons given for the increased time and costs to complete the COMPERJ and RNEST. In turn, these misrepresentations and omissions misled investors about the revenue, earnings, and cash flow the Company would generate.¹⁵⁹

122. Prof. Feinstein concludes that by misleading investors about the reasons underlying the increased cost and timing to complete its development projects, Petrobras misled investors about metrics such as the magnitude and timing of revenue, earnings, and cash flows Petrobras would generate, which "would necessarily inflate the market value of [Petrobras] and the value of its shares."¹⁶⁰

¹⁵⁸ See, for example, Central States Southeast and Southwest Area Pension Fund v. Petroleo Brasileiro S.A. – Petrobras, et al., Expert Report of Professor Steven P. Feinstein, PH.D., CFA, dated May 6, 2016 ("Feinstein CS Report"), p. 48.

¹⁵⁹ See, for example, Feinstein CS Report., p. 48.

¹⁶⁰ See, for example, Feinstein CS Report., p. 48.

2. Prof. Feinstein Fails to Show How the Omissions or Misstatements Alleged by Plaintiffs Could Have Inflated the Price of Petrobras Securities

123. Similar to Dr. Nye, Prof. Feinstein fails to explain how the omissions or misstatements alleged by Plaintiffs would have created inflation in the price of Petrobras securities. While he opines that Petrobras misled investors about the timing, cost, and prospects of the Comperj and RNEST refineries, the timing, costs and prospects were disclosed. He does not show how any alleged omissions or misstatements created inflation in the price of Petrobras securities.

124. As I have discussed, the Numeric Disclosures could not have provided investors with value-relevant information that would have changed the price of Petrobras securities. Therefore, any omissions relating to the costs or prospects of the Comperj and RNEST refineries could not have created inflation.

125. While I completely agree with Professor Feinstein that “a fundamental principle of finance and valuation is that the value of an asset is the value of future cash flows,” I find that Prof. Feinstein ignores that principle in his report as he fails to show that the market was misled about the value of the future cash flows for the two refineries he focuses on.

126. Further, Prof. Feinstein’s opinions regarding delays in refinery production are unrelated to Plaintiffs’ allegations. Even if they were related to Plaintiffs’ allegations, Prof. Feinstein does not show how omissions or misstatements related to delays in refinery production would have contributed to inflation. The delays related to operations at Comperj and RNEST were known to the market and were disclosed by Petrobras prior to the Plaintiffs’ alleged corrective disclosures. As I have discussed, Petrobras provided the market with information on actual and expected costs for the RNEST and Comperj refineries as well as information on timing of construction and operations and delays to that anticipated timing. This information was available to the market from early in the Class Period and was incorporated into the market’s assessment of Petrobras. Therefore, Prof. Feinstein’s opinions regarding the cost overruns and delays with respect to the RNEST and Comperj refineries are irrelevant.

127. Prof. Feinstein suggests that the reason for the delays could cause inflation in the price of Petrobras securities, but does not explain how. In his economic analysis, Prof. Feinstein focuses on the impact of delays on the value of a project. To illustrate his point, Prof. Feinstein proposes the example of his “Refinery A.” In his example, Refinery A is expected to generate \$100mm in

recurring annual cash flows starting two years from now. The start of production at Refinery A is unexpectedly delayed by two years so that the \$100mm in recurring annual cash flows is not expected to begin until four years from now.

128. According to Prof. Feinstein, “the value of Refinery A today would decline by the present value of the lost cash flow associated with the \$200mm in foregone annual earnings. In this scenario, using a discount rate of 10%, for example, the value of Refinery A would be approximately 21% greater without the delay than with the delay – i.e., concealment of the delay would artificially inflate assessment of the value by 21%.”¹⁶¹

129. As I show next, Professor Feinstein’s analysis is misleading, but more importantly it says nothing about his claim that the reasons for a delay affect the value of a project when the delay is known. To support his economic loss causation analysis, Professor Feinstein would have to show that the loss in value of the refinery due to the delay depends on the reason for the delay, which he fails to do. He claims that if the delay is concealed the refinery will be valued too highly, but concealment of delays is not what he claims was misrepresented. The market was well aware of delays and cost overruns in the construction of the two refineries he focuses on before any alleged corrective disclosure. Professor Feinstein does not consider the fact that cost overruns and delays in the oil and gas sector are widespread and likely to be expected by market participants.¹⁶²

130. Professor Feinstein’s analysis of the value impact of the delay is misleading and incomplete. First, oddly, after saying in the first sentence of the paragraph that the value of a project depends on cash flows, he switches to earnings for his example. Second, he misses in his example that it does not make sense to assume that a refinery will come on stream two years from now and that nothing happens between now and then. Presumably, capital expenditures will take place until the refinery comes on stream. These capital expenditures would not reduce earnings, but they would be negative cash flows. With the two year delay, the remaining capital expenditures will be spread out over four years, which would decrease the present value of capital expenditures and hence increase the present value of the cash flows from the refinery as

¹⁶¹ Feinstein CS Report., p. 49.

¹⁶² See for example, Ernst & Young, Spotlight on oil and gas megaprojects, 2014; Jeffries, “Oil Services & Equipment; Subsea Perspectives from an Industry Observer,” January 24, 2014

Confidential

the future capital expenditures are negative cash flows. Third, he assumes that the refinery would always be able to have earnings of \$100 million, so that two years of earnings would be lost due to the delay. However, refineries are subject to wear and tear, so that if the refinery starts producing later, expenses to maintain the refinery in working order would start later and hence their present value would be less. Ultimately, refineries have finite lives, so that if the refinery starts operating later, it will finish operating later. Hence, contrary to his example, earnings are postponed rather than lost. Fourth, as capital expenditures are made, flexibility is lost. This loss of flexibility is costly. For instance, with RNEST, the type of oil to be refined depended on whether Venezuela was part of the project or not. How a refinery is constructed depends on the type of oil it will refine. Hence, a delay that allows resolution of this issue would have been valuable as it would have prevented irreversible capital expenditures that would have made the refinery less useful. Some delays with RNEST actually were related to the role of Venezuela in the refinery and such delays seem unrelated to the allegations that Professor Feinstein focuses on. Yet, he makes no attempt to separate out the effect of these delays in his analysis of damages.

131. In his analysis, Professor Feinstein ignores that at least some analysts thought even early in the relevant period that delays might actually be good news. In 2010, Petrobras was planning to raise a large amount of equity. An analyst concluded then that if that equity offering did not take place on schedule, “refining projects will have to be mothballed for a while, which is good news.”¹⁶³ Another analyst called for “capex discipline” from Petrobras, meaning “some postponement or reduced unit costs in downstream.”¹⁶⁴

132. Professor Feinstein states that “Because the alleged misrepresentations and omission misled investors about the reasons underlying the increased timing and cost to complete certain development projects, they necessarily misled investors about the expected future performance of these projects.”¹⁶⁵ He does not explain how the future performance of the projects is affected by the alleged misrepresentations. To see this, note that his example implies that the refinery will

¹⁶³ Itaú Securities, “4Q09 Results Conf. Call: All About Capitalization,” March 24, 2010, p. 2.

¹⁶⁴ UBS, “Downgrading Voting Shares to Sell; Neutral the Preferred Shares – Revised R\$33/sh PT,” August 11, 2010, p. 8.

¹⁶⁵ Feinstein CS Report., p. 49.

have earnings of \$100 million starting four years from now. In his example, the earnings, and presumably cash flows, in future years are known. The refinery's contribution to the value of the firm depends on its future cash flows. He provides no evidence that costs and delays were misrepresented in a way that affects the value of the refineries.

C. Other Plaintiff Experts

133. Expert reports in this matter were also submitted by Plaintiffs' experts Dr. Vinita Juneja, Dr. John Finnerty, and Mr. Chad Coffman. I find that the opinions expressed in their reports are flawed because they do not address the issue of how omissions or misrepresentations with respect to the Numeric Disclosures or Non-Numeric Disclosures would have inflated the price of Petrobras securities.

D. Facts and Data Blog

134. In addition to alleging that Petrobras misled investors with respect to the effectiveness of its internal controls and anti-corruption and ethics programs, the Complaint alleges that certain information posted on Petrobras's "Fatos e Dados" corporate webpage ("Facts and Data Blog") "peppered the market with falsehoods" throughout the Class Period.¹⁶⁶ The allegations in the Complaint regarding the 15 blog posts at issue are presented in Appendix D. When viewed in its proper context, the relevant information contained on Petrobras's Facts and Data Blog would not have been material to the calculation of the NPV of the relevant Petrobras projects. A review of English language analyst reports and public press show a lack of consideration of the information contained in the Facts and Data Blog posts referenced in the Complaint, generally. Based on my review of the reports and public press I reviewed, I conclude that the posts would not have altered the market's assessment of Petrobras

135. The Complaint alleges that:

. . . statements made on [the] Facts and Data [Blog] . . . were false and misleading because, as confirmed by a plethora of testimony from whistleblowers, arrests and admissions of guilt detailing the endemic fraud at Petrobras involving, *inter alia*, the Abreu e Lima refinery, Comperj, the Pasadena refinery, and SBM, the

¹⁶⁶ Complaint, ¶11.

Confidential

Company was systemically paying for inflated contracts in exchange for bribes to Company executives and party officials.¹⁶⁷

136. The Complaint singles out excerpts from various Facts and Data Blog posts and presents them without their relevant context. In many cases, the referenced posts respond to specific articles or commentary in the press and/or statements made by the Tribunal de Contas a União (“TCU”) regarding its auditing functions that were discussed in certain press reports. The referenced blog posts that respond to specific press reports and/or statements made by the TCU should be understood in that context.

137. I have reviewed English translations of the blog posts referenced in the Complaint as well as materials to which the referenced posts respond, to the extent such information was available to me. This table reflects those materials:

Date of Blog Post	Materials Referenced
January 28, 2010	<ul style="list-style-type: none"> • Salomon, Marta, “Lula contraria TCU e libera verba para obras irregulares,” <i>Folha de S. Paulo</i>, Jan. 28, 2010. • Jungblut, Cristiane & Damé, Luiza, “Lula libera obras que TCU vetou,” <i>O Globo</i>, Jan. 28, 2010. • Machado, Daniela, “Lula sanciona Orçamento de 2010 com dois vetos,” <i>Reuters</i>, February 27, 2010. • Simão, Edna & Lopes, Eugênia, “Lula desafia TCU e coloca dinheiro em obras da Petrobrás sob suspeita,” <i>Estadão</i>, Jan. 28, 2010.
January 29, 2010	<ul style="list-style-type: none"> • “Canetada contra o TCU,” <i>Estado de São Paulo</i>, Jan. 29, 2010.
October 8, 2010	<ul style="list-style-type: none"> • Amora, Dimmi, “TCU diz ter encontrado superfaturamento em obras da Petrobras no Rio,” <i>Folha de S. Paulo</i>, October 8, 2010.
November 9, 2010	<ul style="list-style-type: none"> • Amora, Dimmi, “TCU quer parar obras que Lula mandou seguir,” <i>Folha de S. Paulo</i>, Nov. 10, 2010. • Decision No. 2992/2010, TC 027.472/2009-4, from Nov. 9, 2010.
August 15, 2011	<ul style="list-style-type: none"> • Pardellas, Sérgio, “Doações suspeitas,” <i>IsotÉ</i>, Aug. 16, 2011.
November 8, 2011	<ul style="list-style-type: none"> • Decision No. 2877/2011, TC 028.136/2010-1, from Nov. 8, 2011.
December 29, 2012	<ul style="list-style-type: none"> • <i>Jornal da Cultura</i> 27/12/2012 2º Bloco, TV Cultura (Dec. 27, 2012)
January 7, 2013	<ul style="list-style-type: none"> • “Planejamento no setor eletrico tem falhas, dizem especialistas,”

¹⁶⁷ Complaint, ¶369.

Confidential

	<p><i>Jornal Nacional</i>, Jan. 7, 2013.</p> <ul style="list-style-type: none"> • <i>Obra de usina no RS está parada há 25 anos</i>, Fantastico (Jan. 1, 2013)
August 7, 2013	<ul style="list-style-type: none"> • Transcript of José Sérgio Gabrielli, 23rd Extraordinary Meeting of the Environment Committee, Consumer Protection and Supervision and Control, of the 3rd Session Legislative Meeting of the 54th Legislature (Aug. 6, 2013).
November 13, 2013	<ul style="list-style-type: none"> • “Petrobras pediu sigilo na tramitação dos processos,” <i>Estadão</i>, November 9, 2013 • “Serviço de supervisão era mais caro que obras,” <i>Estadão</i>, November 9, 2013 • “Gasto suspeito em refinaria nos EUA,” <i>Estadão</i>, November 9, 2013
May 10, 2014	<ul style="list-style-type: none"> • Decat, Erich, “Petrobrás sabia de suspeitas sobre propina desde 2012, diz executivo,” <i>Estadão</i>, May 9, 2014. • Schüffner, Cláudia, “Investigação de suborno da SBM inclui Petrobras,” <i>Valor</i>, Feb. 13, 2014.
May 19, 2014	<ul style="list-style-type: none"> • Brandt, Fábio, Borges, André & Bitencourt, Rafael “Sem estudos, refinaria multiplicou aditivos,” <i>Valor</i>, May 15, 2014
May 23, 2014	<ul style="list-style-type: none"> • N/A
July 12, 2014	<ul style="list-style-type: none"> • Bevins, Vincent “Petrobras shares fall, analysts point to poor management by Brazil,” <i>LA Times</i>, July 9, 2014.
July 14, 2014	<ul style="list-style-type: none"> • Sassine, Vinicius and Bresciani, Eduardo, “Abreu e Lima: Empresas suspeitas de pagar propina a Youssef ganharam R\$ 1,3 bilhão em aditivos,” <i>O Globo</i>, July 12, 2014. • “Desvios em Albreu e Lima parecem inesgotáveis,” <i>O Globo</i>, July 11, 2014.

138. The blog posts referenced in the Complaint generally fall into one or both of two categories. First, certain of the blog posts referenced in the Complaint respond, at least in part, to statements by the TCU and/or commentary in the press that discuss such statements (e.g., the posts from January 28, 2010; January 29, 2010; October 8, 2010; November 9, 2010; August 15, 2011; November 8, 2011; December 29, 2012; January 7, 2013; August 7, 2013; May 19, 2014; and July 14, 2014). These posts generally reflect disagreements with the parameters used by the TCU in its analyses of certain Petrobras contracts and with allegations by the TCU of overbilling or overpricing for certain contracts based on those analyses. *See, e.g.*, Post from October 8, 2010 (explaining that “there are technical differences between the methodologies adopted by the company and by the TCU” in their analyses, and that the TCU’s criteria were “insufficient” and

inapplicable “to projects such as Comperj”); Post from May 19, 2014 (“Petrobras reaffirms that there was no ‘overbilling of R\$ 69.6 million’ in the contract with the Abreu e Lima consortium. Since 2008, the company has been clarifying to the TCU that there is a methodological divergence in accounting for items that are specific to the oil industry.”).

139. To the extent that the relevant blog posts responding to reports of statements by the TCU discuss alleged overpayments or overbilling associated with Petrobras contracts, such information would not have changed the market’s perception of the value of the projects discussed, and would not have, therefore, led to inflation in the price of Petrobras securities by inflating the market’s assessment of the value of the projects. As noted above, the incremental value of a refinery project is determined by the difference between the present value of cash outflows required to develop the refinery and the present value of cash flows that the refinery will generate. The statements referenced by Plaintiffs pertain to whether Petrobras’s actual cash outlays were more than the hypothetical lower cash outlays that the TCU asserted Petrobras could have paid and whether Petrobras therefore overpaid or was overbilled relative to that standard. They do not assert that Petrobras either paid more than it reported it had paid or would receive lower cash flows than it expected to receive. Accordingly, the information provided in the blog posts cited in the Complaint would not be material to the calculation of the NPV of the relevant projects, and, as a result, would not have been material to the market’s assessment of projects they discuss (to the extent that the market was even aware of the relevant posts).

140. Second, certain blog posts referenced in the Complaint respond to specific instances of commentary in the press about various aspects of Petrobras’s business, including the purchase of the Pasadena refinery (e.g., the posts from August 7, 2013; May 23, 2014; and July 12, 2014), the renegotiation of a contract with Odebrecht (e.g., the post from November 13, 2013), bribery allegations concerning SBM Offshore (e.g., the posts from May 10, 2014; and July 12, 2014), and Petrobras’s general hiring, transparency and ethics policies (e.g., the posts from August 15, 2011 and December 29, 2012). These posts relate (at most) to Non-Numeric Disclosures and my previous analysis regarding such Disclosures also applies to these statements.

141. The Complaint does not explain how the referenced statements on the Facts and Data Blog would have materially affected investors’ assessment of Petrobras (to the extent that the market was even aware of the relevant posts) and offers no evidence that they did. If the

information on these blogs had been material to investors, I would have expected to see that information used by analysts, by other observers, or by investors in this case. But I have seen no evidence to that effect, which supports my conclusion that these blogs did not materially change the market's assessment of Petrobras.

142. In fact, my review of English language analyst reports and public press confirms that the statements on the Facts and Data Blog posts cited in the Complaint were not material to the market's assessment of Petrobras or the refinery projects at issue. The analyst reports that I reviewed which were published around the dates of the Facts and Data Blog posts cited by Plaintiffs make no mention of the posts. Similarly, Bloomberg News articles published on the relevant days make no mention of the posts, and, of the 15 posts cited in the Complaint, I found only one reference in one article to information similar to that contained in a contemporaneous post.¹⁶⁸ I also conducted a search in Factiva, a commercial press database, and found no articles referencing the posts cited by Plaintiffs.

143. Tellingly, none of the Plaintiffs, or their investment advisors, that have been deposed in this case testified that they read the Facts and Data Blog, much less relied on the information posted.¹⁶⁹ The fact that such a large cross section of sophisticated investors in Petrobras paid no attention to disclosures on the Facts and Data Blog is a strong indication that the broader universe of investors would not consider the relevant information to be material.

144. In summary, the information I have reviewed does not suggest that the relevant statements on the Facts and Data Blog were material to the market's assessment of Petrobras or the refineries at issue. Plaintiffs' experts have not shown that, when viewed in its proper context,

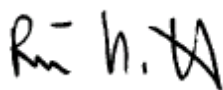
¹⁶⁸ The article was published on May 23, 2014 and referenced an emailed statement from Petrobras which stated that: "Petrobras payments in any country follow rigid, clear internal procedures and comply w/legislation. Co. has internal auditors to ensure payments comply w/procedures." Eeuwen, Karen, "Petrobras Says \$1.25b Pasadena Price Includes Legal Processes," *Bloomberg News*, May 23, 2014.

¹⁶⁹ See, for example, Shale 110:10-14; Nutt 206:6-11; Weltman 148:13-16; Chi 272:5-7; Holley 246:6-12; McCann 163:3-6; Smith 128:11-15; Hannich 107:6-14; Robinson 208:20-209:13; Westhoff 238:25-239:7; 309:24-310:3; Stauffer 166:19-24; Said 177:7-12; Poag 119:2-10; Ogan 180:19-181:5; Schneider 213:23-25; Luchsinger 160:25-161:11; Xiao 230:22-231:6; Audet 249:6-9; Johnson 306:15-19; Anderson 99:13-16; Cortes 237:20-25; Crimmins 220:16-221:7; Cooper 167:7-11; Zerilli 206:25-207:11; van den Bosch 276:19-22; Knutson 168:21-169:13; Moses 165:15-17; Marvin 158:18-21; Sanford 200:6-22; Pope 151:23-25; McGann 199:16-200:8; Bosner 154:22-155:4; Petryk 174:10-18; Soeberg 91:25-92:13; Staples 114:9-12, 18-22; Segovia 152:4-8; Barry 225:19-226:3; Hughes 231:19-232:6; Lian 250:3-7; Saruwatari 155:10-23; Bruebaker 220:17-221:12; Graves 118:5-9; Kennett 160:9-14; and Harrison 57:22-58:2.

Confidential

the relevant information contained on Petrobras's Facts and Data Blog would have been material to the calculation of the NPV of the relevant projects, and thus would have been material to the market's assessment of the projects discussed. Nor have they show that the relevant information regarding Petrobras business generally was taken into account by the market.

Executed this 27th day of May, 2016

A handwritten signature in black ink, appearing to read "René M. Stulz".

René M. Stulz

René M. Stulz

Fisher College of Business
806 Fisher Hall
2100 Neil Avenue
Columbus, OH 43210-1144
Phone: (614) 292-1970
Fax: (614) 292-2359
E-mail: Stulz@cob.ohio-state.edu
Homepage: www.cob.ohio-state.edu/fin/faculty/stulz/

Home Address:
3419 River Seine Street
Columbus, OH 43221
Phone: (614) 771-1110
Cell: (614) 206-0265

UNDERGRADUATE STUDIES

University of Neuchâtel, Switzerland, Licence es Sciences Économiques, 1975.

GRADUATE STUDIES

London School of Economics, 1975-1976, Visiting Graduate Student.

Massachusetts Institute of Technology (MIT), 1976-1980, Ph.D. in Economics.

ACADEMIC APPOINTMENTS

Ohio State University, Everett D. Reese Chair of Banking and Monetary Economics, 1996 to present.

University of Southern California, Visiting Professor, 2007.

University of Chicago, Visiting Professor, Stigler Center, 2003-2004.

Northwestern University, Visiting Scholar, Kellogg School of Management, 2003-2004.

Harvard University, Business School, August 1996 to July 1997, Bower Fellow.

Ohio State University, Director of the Dice Center for Research in Financial Economics, 1995 to present.

Ohio State University, Ralph Kurtz Chair in Finance, 1993-1996.

Ohio State University, Riklis Chair in Business and its Environments, 1988-1993.

Ohio State University, Professor of Finance, 1985 to present.

University of Chicago, Visiting Professor of Finance, 1986-1987.

Massachusetts Institute of Technology, Visiting Associate Professor of Finance, Fall 1985.

Ohio State University, Associate Professor of Finance, 1983-1985.

University of Rochester, Assistant Professor of Finance and Economics, 1980-1983.

OTHER RELEVANT POSITIONS HELD

Research Associate, National Bureau of Economic Research (Asset Pricing Group and Corporate Finance Group).

Director, NBER Project on the Risks of Financial Institutions.

Chairman, Scientific Council, Swiss Finance Institute, 2006 to present.

Board of Directors, American Finance Association, 1988 to 2000, 2002 to 2006.

Consultant to the World Bank, the IMF, the NYSE, Federal Reserve Bank of New York, corporations, and law firms.

Expert testimony in federal courts, state courts, and domestic and international arbitrations.

Taught executives in Europe, Asia and North America (open enrollment as well as for corporations, courses on risk management, banking, derivatives, corporate valuation, investments).

Advisory Committee, Morningstar, 2000-2002.

Director, Banque Paribas, 2002 to present.

Director, Wegelin Fund Management, 1999 to 2010.

President, Gamma Foundation, 2002 to 2013.

Director, Community First Financial Group, Inc., 2001 to 2010.

Director, Peninsula Banking Group, Inc., 2001 to 2010.

Trustee, Global Association of Risk Professionals, 2002 to present; executive committee, 2004 to present; chair of governance committee, 2011 to present.

Chairman, Financial Risk Management Examination Certification Committee, Global Association of Risk Professionals, 2002 to present.

Chairman, New York Federal Reserve Bank/GARP Global Risk Forum (2011, 2013), Bank of England/GARP Global Risk Forum (2012, 2014), Hong Kong Monetary Authority/GARP Global Risk Forum (2013, 2015).

International Advisory Committee, NCCR, 2002 to 2011.

External Reviewer, London Business School Finance Department, 2005.

Financial Advisory Roundtable (FAR), Federal Reserve Bank of New York, 2006 to 2010.

Guest Contributor, Harvard Law School Corporate Governance Blog.

Squam Lake Group, member, 2008 to present.

Senior Academic Fellow, Asia Bureau of Finance and Economic Research, 2012 to present.

Fellow, Wharton Center for Financial Institutions, 2013 to present.

HONORS, SCHOLARSHIPS AND FELLOWSHIPS

Advanced Researcher Fellowship, Swiss National Science Foundation, 1978-1980.

Dean's Research Professorship, Ohio State University, Spring 1984.

Pacesetter Research Award, Ohio State University, April 1986.

President-Elect (1993) and President (1994), International Economics and Finance Society.

Docteur Honoris Causa, University of Neuchâtel, Switzerland, 1998.

Eastern Finance Association Scholar Award, 1998.

Selected keynote speeches: ABFER, Asia-Pacific Finance Association, Bank of the Netherlands Governance Conference, Bocconi Derivatives Annual Conference, Drexel Corporate Governance Conference, Eastern Finance Association, European Corporate Finance Institute, European Finance Association, Financial Management Association, European Financial Management Association, Financial Management Association European Conference, FDIC Annual Conference, Rising Stars Conference, Fourth Annual Conference on Asia-Pacific Financial Markets of the Korean Securities Association, French Finance Association, German Finance Association, Infiniti Conference, Notre Dame/SEC Conference, Northern Finance Association, Swiss Banking Association 100th Anniversary Conference, Western Finance Association.

Assurant Lecture, Georgia Tech University, 2004.

Fellow, Financial Management Association, 2000.

Fellow, American Finance Association, 2005.

Fellow, European Corporate Governance Institute, 2005.

Vice-President (2002), Program Chair, (2003), President (2004), Western Finance Association.

Vice-President (2002), President-elect (2003), President (2004), American Finance Association.

Who's Who in Banking and Finance; Who's Who in Economics.

Jensen Prize for best article in Corporate Finance in the Journal of Financial Economics, 2000, 2008; runner-up, 2011.

William F. Sharpe Award for the best paper published in the Journal of Financial and Quantitative Analysis during the year 2003.

Selected by the magazine Treasury and Risk Management as one of the 100 most influential people in finance (June 2004).

René M. Stulz Scholar Development Fund, created in 2005 by former Ph.D. students.

Fama/DFA Prize for best article in Capital Markets and Asset Pricing in the Journal of Financial Economics, 2005.

Nominated for a Brattle Prize for best paper in Corporate Finance in the Journal of Finance in 2005.

Risk Who's Who, Charter Member, 2006.

Best paper, First Asian-Pacific Capital Markets Conference, Seoul, 2006.

Outstanding Academic Contribution to Corporate Governance Award, Drexel University, 2009.

Risk Manager of the year award, Global Association of Risk Professionals, 2009.

Swiss Finance Institute/Banque Privée Espirito Santo Prize 2010.

Trailblazer in Finance Award, 2014.

Reuters, Highly-Cited Researchers, 2014 onwards.

CONGRESSIONAL TESTIMONY

“Over-the-Counter Derivatives Markets Act of 2009,” testimony to the House of Representatives Committee on Financial Services, 2009.

“Oversight of the Mutual Fund Industry: Ensuring Market Stability and Investor Confidence,” Subcommittee on Capital Markets and Government Sponsored Enterprises, House of Representatives Committee on Financial Services, 2011.

BOOKS

Risk Management and Derivatives, Southwestern College Publishing, 2003.

Handbook of the Economics of Finance, volume 1, edited with George Constantinides and Milton Harris, North-Holland, 2003.

Handbook of the Economics of Finance, volume 2, edited with George Constantinides and Milton Harris, Elsevier, 2013.

International Capital Markets, 3 volumes, edited with Andrew Karolyi, Edward Elgar, 2003.

Readings for the Financial Risk Manager, edited with Richard Apostolik, Wiley, 2004.

Readings for the Financial Risk Manager, edited with Richard Apostolik, Wiley, 2005.

The Risks of Financial Institutions, edited with Mark Carey, University of Chicago Press, 2006.

The Squam Lake Report: Fixing the Financial System, co-authored with the Squam Lake Group, Princeton University Press, 2010.

PUBLISHED PAPERS

"On the Effects of Barriers to International Investment," Journal of Finance, 1981, v36(4), 923-934; reprinted in Emerging Markets, Geert Bekaert and Campbell R. Harvey, ed., Edward Elgar Publishing, 2004, 1-36.

"A Model of International Asset Pricing," Journal of Financial Economics, 1981, v9(4), 383-406.

"The Forward Exchange Rate and Macroeconomics," Journal of International Economics, 1982, v12(3/4), 285-299.

"Options on the Minimum or the Maximum of Two Risky Assets: Analysis and Applications," Journal of Financial Economics, 1982, v10(2), 161-185, reprinted in Options Markets, vol. 2, George Constantinides and A. G. Malliaris, eds., Edward Elgar Publishing, 2001.

"On the Determinants of Net Foreign Investment," *Journal of Finance*, 1983, v38(2), 459-468.

"The Demand for Foreign Bonds," *Journal of International Economics*, 1983, v15(3/4), 225-238.

"Optimal Hedging Policies," *Journal of Financial and Quantitative Analysis*, 1984, v19(2), 127-140.

"Currency Preferences, Purchasing Power Risks and the Determination of Exchange Rates in an Optimizing Model," *Journal of Money, Credit and Banking*, 1984, v16(3), 302-316; reprinted in *Monetary Policy and Uncertainty*, Manfred J. M. Neumann, ed., Nomos, 1986.

"Pricing Capital Assets in an International Setting: An Introduction," *Journal of International Business Studies* (Winter 1984), 55-73; reprinted in *International Financial Management: Theory and Applications*, Donald R. Lessard, ed., John Wiley & Sons, 1985.

"Macroeconomic Time-Series, Business Cycles and Macroeconomic Policies," with Walter Wasserfallen, *Carnegie-Rochester Conference Series on Public Policy* (Spring 1985), 9-55.

"An Analysis of Secured Debt," with Herb Johnson, *Journal of Financial Economics*, 1985, v14(4), 501-522, reprinted in *The Debt Market*, vol. 3, Steve A. Ross, editor, Edward Elgar, 2000.

"The Determinants of Firm's Hedging Policies," with Clifford W. Smith, *Journal of Financial and Quantitative Analysis*, 1985, v20(4), 391-406; reprinted in *Studies in Financial Institutions: Commercial Banks*, C. James and C.W. Smith, eds., McGraw Hill, 1993, and in *Corporate Hedging in Theory and Practice: Lessons from Metallgesellschaft*, Christopher L. Culp and Merton H. Miller, eds., Risk Publications, London, 1999.

"Asset Pricing and Expected Inflation," *Journal of Finance*, 1986, v41(1), 209-224.

"Risk Bearing, Labor Contracts and Capital Markets," with Patricia B. Reagan, *Research in Finance*, 1986, v6, 217-232.

"Interest Rates and Monetary Policy Uncertainty," *Journal of Monetary Economics*, 1986, v17(3), 331-348.

"Time-Varying Risk Premia, Imperfect Information and the Forward Exchange Rate," *International Journal of Forecasting*, 1987, v3(1), 171-178.

"The Pricing of Options with Default Risk," with Herb Johnson, *Journal of Finance*, 1987, v42(2), 267-280.

"An Equilibrium Model of Exchange Rate Determination and Asset Pricing with Non-Traded Goods and Imperfect Information," *Journal of Political Economy*, 1987, v95(5), 1024-1040.

"Managerial Control of Voting Rights: Financing Policies and the Market for Corporate Control," *Journal of Financial Economics*, 1988, v20(1/2), 25-54, reprinted in M.C. Jensen and C.W. Smith, eds., *The Modern Theory of Corporate Finance*, McGraw-Hill, 1989 (second edition).

"Risk and the Economy: A Finance Perspective," with K.C. Chan, *Risk and the Economy*, in C.C. Stone, ed., *Financial Risk: Theory, Evidence and Implications*, Proceedings of the Eleventh Annual Economic Conference of the Federal Reserve Bank of St. Louis, Kluwer Academic Publishers, 1988.

"Capital Mobility and the Current Account," *Journal of International Finance and Money*, 1988, v7(2), 167-180.

"The Eurobond Market and Corporate Financial Policy: A Test of the Clientele Hypothesis," with Yong Cheol Kim, *Journal of Financial Economics*, 1988, v22(2), 189-205.

"Contracts, Delivery Lags, and Currency Risks," with Patricia Reagan, *Journal of International Money and Finance*, 1989, v8(1), 89-104.

"The Pricing of Stock Index Options in General Equilibrium," with Warren Bailey, *Journal of Financial and Quantitative Analysis*, 1989, v24(1), 1-12.

"Managerial Performance, Tobin's q , and the Gains from Successful Tender Offers," with Larry Lang and Ralph Walkling, *Journal of Financial Economics*, 1989, v24(1), 137-154.

"Real Exchange Rate Dynamics and the Financial Theory of the Trading Firm," in *Recent Developments in International Banking and Finance*, S. Khoury and A. Ghosh, eds., Probus Publishing Company, 1989, v3, 247-262.

"Properties of Daily Stock Returns from the Pacific Rim Stock Markets: Evidence and Implications," with Warren Bailey and Edward Ng, in S.G. Rhee and R. Chang, eds., *Pacific-Basin Capital Markets Research*, North Holland, 1990, 155-171.

"The Pricing of Currency Options: A Review," in R. E. Schwartz and C. W. Smith, eds., *Handbook of Currency and Interest Rate Risk Management*, Simon & Schuster, 1990, 5/1-5/20.

"Stock Index Futures in Switzerland: Pricing and Hedging Performance," with Walter Wasserfallen and Thomas Stucki, *Review of Futures Markets*, 1990, v9(3), 576-592.

"The Distribution of Target Ownership and the Division of Gains in Successful Takeovers," with Ralph A. Walkling and Moon H. Song, *Journal of Finance*, 1990, v45(3), 817-834.

"Managerial Discretion and Optimal Financing Policies," *Journal of Financial Economics*, 1990, v26(1), 3-26, reprinted in *The Theory of Corporate Finance*, M.J. Brennan, ed., Edward Elgar, 1995.

"Benefits of International Diversification: The Case of Pacific Basin Stock Markets," with Warren Bailey, *Journal of Portfolio Management*, 1990, v16(4), 57-61.

"A Test of the Free Cash Flow Hypothesis: The Case of Bidder Returns," with Ralph A. Walkling and Larry H. Lang, *Journal of Financial Economics*, 1991, v29(2), 315-335.

"Is There a Global Market for Convertible Bonds?" with Yong-Cheol Kim, *Journal of Business*, 1992, v65(1), 75-92.

"Industry Contagion Effects of Bankruptcy and Firm Size," with Larry Lang, in Ed Altman, ed., *Bankruptcy and Distressed Restructurings*, Business One Irwin, 1992, 215-221.

"Contagion and Competitive Intra-Industry Effects of Bankruptcy Announcements," with Larry Lang, *Journal of Financial Economics*, 1992, v32(1), 45-60.

"Global Financial Markets and the Risk Premium on U.S. Equity," with K.C. Chan and Andrew Karolyi, *Journal of Financial Economics*, 1992, v32(2), 137-168.

"Portfolio Management and Exchange Rate Risks: New Theoretical and Empirical Perspectives," with Warren Bailey and Edward Ng, S. Khoury and A. Ghosh, eds., *Recent Developments in International Banking and Finance*, 1992, v6, 230-248.

"Optimal Hedging of Stock Portfolios Against Foreign Exchange Risks: The Case of the Nikkei 225," with Warren Bailey and Edward Ng, *Global Finance Journal*, 1992, v3(2), 97-114.

"Contracting Costs, Inflation and Relative Price Volatility," with Patricia Reagan, *Journal of Money, Credit and Banking*, 1993, v25(3), Part 2, 585-601.

"Tobin's q, Diversification, and Firm Performance," with Larry Lang, *Journal of Political Economy*, 1994, v102(6), 1248-1280, reprinted in *Empirical Corporate Finance*, vol. IV, Michael Brennan, ed., Edward Elgar, 2001.

"International Asset Pricing: An Integrative Survey," *Handbook of Modern Finance*, R. Jarrow, M. Maksimovic and W. Ziemba, eds., North Holland-Elsevier, 1995, 201-223.

"Asset Sales, Firm Performance and the Agency Costs of Managerial Discretion," with Larry Lang and Annette Poulsen, *Journal of Financial Economics*, 1994, v37(1), 3-37, reprinted in *Empirical Corporate Finance*, vol. III, Michael J. Brennan, ed., Edward Elgar, 2001.

"The Cost of Capital in Internationally Integrated Markets," *European Financial Management*, 1995, 11-22.

"An Analysis of the Wealth Effects of Japanese Offshore Dollar-Denominated Convertible and Warrant Bond Issues," with Jun-Koo Kang, Yong-Cheol Kim and Kyung-Joo Park, *Journal of Financial and Quantitative Analysis*, 1995, v30(2), 257-270.

"Globalization of Capital Markets and the Cost of Capital: The Case of Nestlé," *Journal of Applied Corporate Finance*, 1995, v8(3,Fall), 30-38.

"Foreign Equity Investment Restrictions, Capital Flight, and Shareholder Wealth Maximization," with Walter Wasserfallen, *Review of Financial Studies*, 1995, v8(4), 1019-1057.

"Leverage, Investment and Firm Growth," with Larry Lang and Eli Ofek, *Journal of Financial Economics*, 1996, v40(1), 3-29.

"How Different is Japanese Corporate Finance?", with Jun-Koo Kang, *Review of Financial Studies*, 1996, v9(1), 109-139.

"Information, Trading and Stock Returns: Lessons from Dually-Listed Securities," with K.C. Chan, Wai-Ming Fong, and Bong-Chan Kho, *Journal of Banking and Finance*, 1996, v20(7), 1161-1187.

"Timing, Investment Opportunities, Managerial Discretion, and the Security Issue Decision," with Kooyul Jung and Yong-Cheol Kim, *Journal of Financial Economics*, 1996, v42(2), 159-185, reprinted in *Empirical Corporate Finance*, vol. III, Michael J. Brennan, ed., Edward Elgar, 2001.

"Why Do Markets Move Together? An Investigation of U.S.-Japan Stock Return Comovements," with G. Andrew Karolyi, *Journal of Finance*, 1996, v51(3), 951-986.

"Rethinking Risk Management," *Journal of Applied Corporate Finance*, 1996 (Fall), 8-24. Reprinted in *Corporate Hedging in Theory and Practice: Lessons from Metallgesellschaft*, Christopher L Culp and Merton H. Miller, eds., Risk Publications, London, 1999, and in *Corporate Risk: Strategies and Management*, Gregory W. Brown and Donald H. Chew, eds., Risk Publications, London, 1999.

"Why Is There a Home Bias? An Analysis of Foreign Portfolio Equity Ownership in Japan," with Jun-Koo Kang, *Journal of Financial Economics*, 1997, v46(1), 3-28.

"Are Internal Capital Market Efficient?" with Hyun-Han Shin, *Quarterly Journal of Economics*, 1998, v113(2), 531-552.

"The Determinants and Implications of Corporate Cash Holdings," with Tim Opler, Lee Pinkowitz, and Rohan Williamson, *Journal of Financial Economics*, 1999, v52(1), 3-46. A shortened version of this paper appeared as "Corporate Cash Holdings," *Journal of Applied Corporate Finance*, 2001 v14(1), 55-79.

"Do Foreign Investors Destabilize Stock Markets? The Korean Experience in 1997," with Hyuk Choe and Bong-Chan Kho, *Journal of Financial Economics*, 1999, v54(2), 227-264.

"The Underreaction Hypothesis and the New Issue Puzzle: Evidence from Japan," with Yong-Cheol Kim and Jun-Koo Kang, *Review of Financial Studies*, 1999, v12(3), 519-534.

"International Portfolio Flows and Security Markets," in *International Capital Flows*, edited by Martin Feldstein, University Chicago Press, 1999, 257-293, reprinted in *Emerging Markets*, Geert Bekaert and Campbell R. Harvey, ed., Edward Elgar Publishing, 2004, 387-423.

"Globalization, Corporate Finance and the Cost of Capital," *Journal of Applied Corporate Finance*, 1999, v12(3), 8-25.

"Do Banking Shocks Affect Firm Performance? An Analysis of the Japanese Experience," with Jun-Koo Kang, *Journal of Business*, 2000, v73(1), 1-23.

"Banks, the IMF, and the Asian crisis," with Bong-Chan Kho, *Pacific Basin Finance Journal*, 2000, v8(2), 177-216.

"U.S. Banks, Crises, and Bailouts: From Mexico to LTCM," with Bong-Chan Kho and Dong Lee, *American Economic Review*, 2000, v90(2), 28-31.

"Financial Structure, Corporate Finance and Economic Growth," *International Review of Finance*, 2000, v1(1), 11-38.

"Merton Miller and Modern Finance," *Financial Management*, 2000, v29(4), 119-131. Reprinted in the *Journal of Applied Corporate Finance*, 2001(Winter), 8-20.

"International Competition and Exchange Rate Shocks: A Cross-Country Industry and Analysis of Stock Returns," with John Griffin, *Review of Financial Studies*, 2001, v14(1), 215-241.

"Divestitures and the Liquidity of the Market for Corporate Assets," with Frederick Schlingemann and Ralph A. Walkling, *Journal of Financial Economics*, 2002, v64(1), 117-144, reprinted in *Corporate Restructuring*, vol. 2, John Campbell and David J. Denis, ed., Edward Elgar Publishing, 2005.

"Should we Fear Capital Flows?," in *International Financial Markets: The Challenge of Globalization*, Leonardo Auernheimer (Editor), University of Chicago Press, 2003, Chicago, Ill.

"Corporate Governance, Investor Protection, and the Home Bias," with Magnus Dahlquist, Lee Pinkowitz, and Rohan Williamson, *Journal of Financial and Quantitative Analysis*, 2003, v38(1), 87-110.

"Equity Market Liberalizations as Country IPOs," with Rodolfo Martell, *American Economic Review, Papers and Proceedings*, 2003, v93(2), 97-101.

"Culture, Openness, and Finance," with Rohan Williamson, *Journal of Financial Economics*, 2003, v70(3), 313-349.

"A New Approach to Measuring Financial Contagion," with Kee-Hong Bae and Andrew Karolyi, *Review of Financial Studies*, 2003, v16, 717-763. Pre-publication Working Paper

“Are Assets Priced Locally or Globally?,” with Andrew Karolyi, in Constantinides, George, Milton Harris and René Stulz (eds.), *The Handbook of the Economics of Finance*, North Holland, 2003.

"Why are Foreign Firms that List in the U.S. Worth More?" with Craig Doidge and Andrew Karolyi, *Journal of Financial Economics*, 2004, v71(2), 205-238.

"Daily Cross-Border Flows: Pushed or Pulled?," with Federico Nardari and John Griffin, *Review of Economics and Statistics*, 2004, v86(3), 641-657.

"Firm Size and the Gains from Acquisitions," with Sara B. Moeller and Frederik P. Schlingemann, *Journal of Financial Economics*, 2004, v73, 201-228.

“Should we Fear Derivatives?” *Journal of Economic Perspectives*, 2004, v18(3), 173-192; reprinted in *The ICFAI Journal of Derivatives Markets*, 2005, v2(1), 42-53.

“Wealth Destruction on a Massive Scale? A Study of Acquiring-Firm Returns in the Recent Merger Wave,” with Sara B. Moeller and Frederik P. Schlingemann, *Journal of Finance*, 2005, v60(2), 757-782.

“Do Domestic Investors have an Edge? The Trading Experience of Foreign Investors in Korea,” with Hyuk Choe and Bong-Chan Kho, *Review of Financial Studies*, 2005, v18(3), 795-829.

“The Limits of Financial Globalization,” *Journal of Finance*, 2005, v60(4), 1595-1638; reprinted in *Journal of Applied Corporate Finance*, 2007, v19(1), 8-15.

“Does the Contribution of Corporate Cash Holdings and Dividends to Firm Value Depend on Governance? A Cross-Country Analysis,” with Lee Pinkowitz and Rohan Williamson, *Journal of Finance*, 2006, v61(6) 2725-2751; reprinted in *Journal of Applied Corporate Finance*, 2007, v19(1), 81-87.

“Dividend Policy and the Earned/Contributed Capital mix: A Test of the Life-cycle Theory,” with Harry DeAngelo and Linda DeAngelo, *Journal of Financial Economics*, 2006, v81(2), 227-254.

"Enterprise Risk Management: Theory and Practice," with Brian W. Nocco, *Journal of Applied Corporate Finance*, Fall 2006, v18(8), 8-20.

“Do Investors Trade more when Stocks have Performed Well? Evidence from 46 Countries,” with John M. Griffin and Federico Nardari, *Review of Financial Studies*, 2007, v20(3), 905-951.

“Why Do Firms Become Widely Held? An Analysis of the Dynamics of Corporate Ownership,” with Jean Helwege and Christo Pirinsky, *Journal of Finance*, 2007, 62 (3), 995-1028.

"Hedge Funds: Past, Present, and Future," *Journal of Economic Perspectives*, 2007, v21(2), 175-194.

"The Economics of Conflicts of Interests in Financial Institutions," with Hamid Mehran, *Journal of Financial Economics*, 2007, v85(2), 267-296.

"Why Do Countries Matter so much for Corporate Governance?" with Craig Doidge and Andrew Karolyi, *Journal of Financial Economics*, 2007, v86, 1-39.

"How do Diversity of Opinion and Information Asymmetry Affect Acquirer Returns?" with Sara B. Moeller and Frederik P. Schlingemann, *Review of Financial Studies*, 2007, v20(6), 2047-2078.

"Do Local Analysts know more? A Cross-Country Study of Performance of Local Analysts and Foreign Analysts," with Kee-Hong Bae and Hongping Tan, *Journal of Financial Economics*, 2008 v88(3), 581-606.

"Why Do Private Acquirer Pay so Little Compared to Public Acquirers?" with Leonce L. Barger, Frederik P. Schlingemann, and Chad J. Zutter, *Journal of Financial Economics*, 2008, v89(3), 375-390

"Risk Management Failures: What Are They and When Do They Happen?" *Journal of Applied Corporate Finance*, 2008, v20, No. 4, 39-48.

"Private Benefits of Control, Ownership, and the Cross-Listing Decision," with Craig Doidge, G. Andrew Karolyi, Karl V. Lins, and Darius P. Miller, *Journal of Finance*, 2009, v64, 425-466.

"Has New York Become Less Competitive than London in Global Markets? Evaluating Foreign Listing Choices Over Time," with Craig Doidge, and G. Andrew Karolyi, *Journal of Finance Economics*, 2009, v91, No. 3, 253-277.

"Differences in Governance Practices between U.S. and Foreign Firms: Measurement, Causes, and Consequences," with Reena Aggarwal, Isil Erel, and Rohan Williamson, *Review of Financial Studies*, 2009, v22(8), 3171-3209.

"Managerial Ownership Dynamics and Firm Value," with Rüdiger Fahlenbrach, *Journal of Financial Economics*, 2009, v92(3), 342-361.

"How Much Do Banks Use Credit Derivatives to Hedge Loans?" with Bernadette Minton and Rohan Williamson, *Journal of Financial Services Research*, 2009, v35(1), 1-31.

"Securities Laws, Disclosure, and National Capital Markets in the age of Financial Globalization," *Journal of Accounting Research*, 2009, v47(2), 349-390.

"Why Do U.S. Firms Hold so Much More Cash than they Used to?" with Thomas W. Bates, and Kathleen M. Kahle, *Journal of Finance*, 2009, v64(5), 1985-2021.

"Financial Globalization, Governance, and the Evolution of the Home Bias," with Bong-Chan Kho and Francis E. Warnock, *Journal of Accounting Research*, 2009, v47(2), 597-635.

"Seasoned Equity Offerings, Market Timing and the Corporate Lifecycle," with Harry DeAngelo and Linda DeAngelo, *Journal of Financial Economics*, 2010, v95(3), 275-295.

"Why do Firms Appoint CEOs as Outside Directors?" with Rüdiger Fahlenbrach and Angie Low, *Journal of Financial Economics*, 2010, v97(1), 12-32.

"Credit Default Swaps and the Credit Crisis," *Journal of Economic Perspectives*, 2010, v.24(1), 73-92.

"Why Do Foreign Firms Leave U.S. Equity Markets?," with Craig Doidge and G. Andrew Karolyi, *Journal of Finance*, 2010, v.65(4), 1507-1553.

"Hedge Fund Contagion and Liquidity Shocks," with Nicole M. Boyson and Christof W. Stahel, *Journal of Finance*, 2010, v65(5), 1789-1816.

"Bank CEO Incentives and the Credit Crisis," with Rüdiger Fahlenbrach, *Journal of Financial Economics*, 2011, v99, 11-26.

"When Are Analyst Recommendation Changes Influential?," with Roger K. Loh, *Review of Financial Studies*, 2011, v24(2), 593-627.

"The Credit Crisis Around the Globe: Why Did Some Banks Perform Better?," with Andrea Beltratti, *Journal of Financial Economics*, 2012, v105(1), 1-17.

"Why Are U.S. Stocks More Volatile?," with Söhnke M. Bartram and Gregory Brown, *Journal of Finance*, 2012, v67(4), 1329-1370.

"Market Institutions, Financial Market Risks, and The Financial Crisis," with Mark Carey, Anil K. Kashyap, and Raghuram Rajan, *Journal of Financial Economics*, 2012, v104(3), 421-424.

"This Time Is the Same: Using Bank Performance in 1998 to Explain Bank Performance during the Recent Financial Crisis," with Rüdiger Fahlenbrach and Robert Prilmeier, *Journal of Finance*, 2012, 2139-2185.

"Access to Capital, Investment, and the Financial Crisis," with Kathleen Kahle, *Journal of Financial Economics*, 2013, v110(2), 280-299.

"The U.S. Left Behind? Financial Globalization and the Rise of IPOs Outside the U.S.," with Craig Doidge and G. Andrew Karolyi, *Journal of Financial Economics*, 2013, v110(3), 546-573.

"Why Did Holdings of Highly – Rated Securitization Tranches Differ So Much Across Banks?" with Isil Erel and Taylor Nadauld, *The Review of Financial Studies*, 2014, v27(2), 404-453.

"Liquid-Claim Production, Risk Management, and Bank Capital Structure: Why High Leverage is Optimal for Banks," with Harry DeAngelo, *Journal of Financial Economics*, 2015, v116, 219-236.

"Governance, Risk Management, and Risk-Taking in Banks," Economic Policy Review, Federal Reserve Bank of New York, forthcoming. (A shorter version was published as "Risk-Taking and Risk Management by Banks," Journal of Applied Corporate Finance, 2015, v.27(1), 8-18).

"Corporate Acquisitions, Diversification, and the Firm's Lifecycle" (with Asli M. Arikan), Journal of Finance, forthcoming.

"Do U.S. Firms Hold More Cash than Foreign Firms?" (with Lee Pinkowitz and Rohan Williamson), The Review of Financial Studies, forthcoming.

"Firm Rigidities and the Decline of Growth Opportunities" (with Claudio Loderer and Urs Walchli), Management Science, forthcoming.

"Why Don't All Banks Practice Regulatory Arbitrage? Evidence from the Usage of Trust Preferred Securities" (with Nicole Boyson and Rüdiger Fahlenbrach), The Review of Financial Studies, forthcoming.

PROFESSIONAL JOURNAL ARTICLES, BOOK REVIEWS, NOTES AND COMMENTS

Review of "Managing Foreign Exchange Risk," Richard J. Herring, ed., Journal of Money, Credit and Banking (February 1985), 124-125.

"On Capital Mobility in the World Economy," Carnegie-Rochester Conference Series on Public Policy (Spring, 1986), 105-114.

"Portfolio Management in International Capital Markets," Financial Markets and Portfolio Management (1, 1986), 18-23.

"Portfolio Insurance, Program Trading and the Crash of 1987," Financial Markets and Portfolio Management (1, 1988), 11-22.

"SMI Futures," with T. Stucki and W. Wasserfallen, Financial Markets and Portfolio Management (4, 1989), 288-300.

"Benefits of International Diversification with Daily Data: The Case of Pacific-Basin Stock Markets," with Warren Bailey, Journal of Portfolio Management (4,1990), 57-61.

"Portfolio Insurance with Options and Futures on the SMI," with T. Stucki and W. Wasserfallen, Financial Markets and Portfolio Management (2,1990), 99-115.

"Securities Transaction Taxes: Lessons from the International Experience," in The Globalization of Equity Markets, Jeffrey Frankel, ed., University of Chicago Press, 1994.

"Identifying and Quantifying Exposures," with Rohan Williamson, in *Financial Risk and the Corporate Treasury: New Developments in Strategy and Control*, Robert Jameson, ed., Risk Publications, London, 1997, 33-51. Reprinted in *Corporate Risk: Strategies and Management*, Gregory W. Brown and Donald H. Chew, eds., Risk Publications, London, 1999. Pre-publication Working Paper

"What's Wrong with Modern Capital Budgeting?," *Financial Practice and Education*, Fall/Winter 1999, p.5-9.

"Diminishing the Threats to Shareholder Wealth," *Financial Times*, Mastering Risk Series, April 25, 2000.

"Why Risk Management is not Rocket Science," *Financial Times*, Mastering Risk Series, June 27, 2000.

"An Emotional High for Stocks?," a review of "Irrational Exuberance" by Robert J. Shiller, *Science* (June 30, 2000), 2323.

"Demystifying Financial Derivatives," *The Milken Institute Review*, Third Quarter 2005, 20-31.

"Merton Miller," *New Palgrave Dictionary*, 2006.

"Financial Derivatives: Lessons from the Subprime Crisis," *The Milken Institute Review*, First Quarter 2009, 59-70.

"Six Ways Companies Mismanage Risk," *Harvard Business Review*, February 2009, v87(3), 86-94.

"In Defense of Derivatives and How to Regulate Them," *Wall Street Journal*, April 7, 2009.

SELECTED RESEARCH IN PROGRESS AND WORKING PAPERS

"Is Sell-Side Research More Valuable in Bad Times?" (with Roger Loh).

"Do Firms Issue More Equity when Markets are More Liquid?" (with Dimitrios Vagias and Mathijs A. van Dijk).

"Does Target CEO Retention in Acquisition Involving Private Equity Acquirers Harm Target Shareholders?" (with Leonce L. Barger, Frederik P. Schlingemann, and Chad J. Zutter).

"Did Capital Requirements and Fair Value Accounting Spark Fire Sales in Distressed Mortgage-Backed Securities?" (with Craig Merrill B. Merrill, Taylor D Nadauld, and Shane M. Sherlund).

"The U.S. Listing Gap" (with Craig Doidge and Andrew Karolyi).

“Are Firms in ‘Boring’ Industries Worth Less?” (with Jia Chen and Kewei Hou).

“Bank Sovereign Bond Holdings, Sovereign Shock Spillovers, and Moral Hazard during the European Crisis” (with Andrea Beltratti).

"Country Governance and Corporate Investment Decisions: An Analysis of Cross-Border Acquisitions,” (with Jesse Ellis, Sara B. Moeller, and Frederik P. Schlingemann).

"The Dark Side of Outside Directors: Do they Quit When They are Most Needed?" (with Rüdiger Fahlenbrach and Angie Low).

“Bank size and performance” (with Alvaro Taboada and Bernadette Minton).

"Shareholder Wealth and Firm Risk" (with Hyun-Han Shin).

"Firm value, Risk, and Growth Opportunities" (with Hyun-Han Shin).

"Financing Flows" (with Dong Lee and Han Shin).

EDITORIAL AND REFEREEING ACTIVITIES

Advisory Editor, Journal of Investment Management, 2003 to present.

Advisory Editor, Journal of Financial Economics, 2000 to present.

Advisory Editor, Journal of Financial Services, 1999 to present.

Editor, Journal of Finance, 1988 to 2000.

Editor, Corporate Finance Abstracts, Social Science Research Network, 1998 to present.

Editor, Journal of Financial Economics, 1982 to 1987.

Board of Editors, Journal of Banking and Finance, 2008.

Co-Editor, Banking and Financial Institutions Abstracts, Social Science Research Network, 1998 to present.

Co-Editor, Financial Markets and Portfolio Management, 1999 to present.

Associate Editor, Journal of Risk, 2006 to present.

Board of Editors, Japan and the World Economy, 2006 to present.

Advisory Editor, The Review of Finance, 2003 to 2009.

Advisory Editor, Journal of Economic Perspectives, 2006 to 2008.

Associate Editor, Journal of Economic Perspectives, 2003 to 2005.

Associate Editor, Journal of Financial Abstracts, 1994 to 1998.

Associate Editor, Journal of Financial Economics, 1988 to 1999.

Associate Editor, Journal of International Finance and Accounting, 1988 to present.

Associate Editor, Global Finance Journal, 1988 to present.

Associate Editor, Journal of International Financial Markets, Institutions and Money, 1989 to present.

Associate Editor, Journal of Fixed Income, 1991 to present.

Associate Editor, Journal of International Trade and Finance, 1992 to present.

Associate Editor, Journal of Financial and Quantitative Analysis, 1983-1985.

Acted as an ad hoc referee for AER, JIE, JAE, JFE, JME, JMCB, JFQA, QJE, JF, JB, JPE, Canadian Journal of Economics, Management Science, Marketing Science, Journal of International Money and Finance, Journal of International Business Studies, the Canadian NSF and the NSF.

Editorial Board, Journal of Financial Intermediation, 2013 to present.

TESTIMONY OF RENÉ M. STULZ (PAST FOUR YEARS)

Case Name: In Re Bank of America Corp. Securities, Derivative, and Employee Retirement Income Security Act (ERISA) Litigation
Case No.: No. 09 MDL 2058 (PKC) (United States District Court, Southern District of New York)
Date of Testimony: May 2012 (Deposition)

Case Name: In Re REFCO Inc. Securities Litigation
Case No.: 07-MDL-1902 (United States District Court, Southern District of New York)
Date of Testimony: September 2012 (Deposition)

Case Name: Denver Employees Retirement Plan against JPMorgan Chase Bank, N.A.
Case No.: Index No. 650320/2010 (Supreme Court of the State of New York, County of New York)
Date of Testimony: October 2012 (Deposition)

Case Name: Dodona I, LLC et al. v. Goldman Sachs & Co., et al.
Case No.: Case No. 10-CV-07497 (United States District Court, Southern District of New York)
Date of Testimony: June 2013 (Deposition), February 2014 (Deposition)

Case Name: In re BP p.l.c. Securities Litigation
Case No.: Case No. 4:10-MD-02185 (United States District Court, Southern District of Texas, Houston Division)
Date of Testimony: September 2013 (Deposition), March 2014 (Deposition)

Case Name: In Re China MediaExpress Inc.
Case No.: Case No. 11 Civ. 0804 (VM/GWG), United States District Court, Southern District of New York
Date of Testimony: May 2014 (Deposition)

Case Name: Postova Banka, A.S. and Istrokapital SE, Claimants, and The Hellenic Republic, Respondent
Case No.: Icsid Case No. ARB/13/8

Date of Testimony: September 2014 (Hearing)

Case Name: Plumbers & Pipefitters National Pensions Fund, et al. v. Michael J. Burns et al.; Hawaii Ironworkers Annuity Trust Fund v. Bernard N. Cole et al.

Case No.: No. 3; 10-cv-00371-JGC (United States District Court, Northern District of Ohio)

Date of Testimony: May 2015 (Deposition)

Case Name: In Re Delcath Systems, Inc. Securities Litigation

Case No.: Case No. 13-CV-3116 (LGS) (United States District Court, Southern District of New York)

Date of Testimony: January 2015 (Deposition)

Case Name: National Australia Bank Limited and TSL (USA), Inc., v. Goldman Sachs & Co.

Case No.: FINRA Dispute Resolution No. 12-04099

Date of Testimony: April 2015 (Arbitration Hearing)

Case Name: In Re The Bear Stearns Companies, Inc. Securities, Derivative, and Erisa Litigation

Case No.: Case No. 09 Civ. 8161 (RWS)

Date of Testimony: June 2015 (Deposition)

Case Name: FutureSelect Portfolio Management, Inc., v. Tremont Group Holdings, Inc.

Case No.: Superior Court of the State of Washington. Court of Appeals No. 68130-3-I

Date of Testimony: September 2015 (Deposition), November 2015 (Trial)

Case Name: Federal Home Loan Mortgage Corporation v. Deloitte & Touche LLP.

Case No.: Case No. 1:14-cv-23713-UU, United States District Court Southern District of Florida, Miami Division

Date of Testimony: November 2015 (Deposition)

Case Name: In Re MF Global Holdings Limited Investment Litigation, Relating to The Commodities Customer Class Action; Sapere CTA Fund, L.P. vs. Corzine, et al.; Tavakoli, as Litigation Trustee of the MF

Case No.: Global Litigation Trust v. Corzine, et al.; and U.S. Commodity
Futures Trading Commission v. MF Global Holdings Ltd, et al.
Case No. 1:11-cv-07866, United States District Court, Southern
District of New York
Date of Testimony: November 2015 (Deposition)

Case Name: Basis Yield Alpha Fund (Master) v. The Goldman Sachs Group,
Inc. et al.
Case No.: Case No. 652996/2011, Supreme Court of the State of New York,
County of New York
Date of Testimony: April 2016 (Deposition)

Case Name: In re Barclays Bank PLC Securities Litigation
Case No.: No. 1:09-cv-01989-PAC, United States District Court, Southern
District of New York
Date of Testimony: April 2016 (Deposition)

Documents Relied Upon for the Expert Report of Rene M. Stulz

Pleadings	Date
Consolidated Fourth Amended Class Action Complaint, "In Re: Petrobras Securities Litigation."	11/30/15
Central States Southeast and Southwest Area Pension Fund v. Petroleo Brasileiro S.A. – Petrobras, et al.	5/20/15
Data	
Bloomberg	
Factiva	
PSR Group, "International Country Risk Guide."	
World Bank, "World Governance Indicators Project," http://info.worldbank.org/governance/wgi/index.aspx#home .	
World Bank, "World Governance Indicators, Description of Methodology – Control of Corruption," http://info.worldbank.org/governance/wgi/pdf/cc.pdf .	
World Bank Development Indicators, "GDP Growth (annual %)," http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG .	
World Bank Development Indicators, "Gross Capital Formation (% of GDP)," http://data.worldbank.org/indicator/NE.GDI.TOTL.ZS .	
World Bank Development Indicators, "GDP, PPP (constant 2011 international \$)," http://data.worldbank.org/indicator/NY.GDP.MKTP.PP.KD .	
Depositions	Date
Deposition of Aaron Anderson 30(b)(6), April 20, 2016.	4/20/16
Deposition of Lisa Audet 30(b)(6), 30(b)(1), May 6, 2016.	5/6/16
Deposition of Gregory Barry 30(b)(6), May 19, 2016.	5/19/16
Deposition of Zeljka Bosner 30(b)(1), May 17, 2016.	5/17/16
Deposition of Gary Bruebaker 30(b)(1), February 24, 2016.	2/24/16
Deposition of Joseph Chi 30(b)(6), April 8, 2016.	4/8/16
Deposition of Christopher Cooper 30(b)(6), May 18, 2016.	5/18/16
Deposition of Edward Cortes, April 15, 2016.	4/15/16
Deposition of Robert Crimmins 30(b)(6), April 19, 2016.	4/19/16
Deposition of Mauro Rodrigues da Cunha, April 19, 2016.	4/19/16
Deposition of John Graves 30(b)(6), March 10, 2016.	3/10/16
Deposition of Dr. Fabian Hannich 30(b)(6), November 2, 2015.	11/2/15
Deposition of Alice Elizabeth Harrison 30(b)(6), March 23, 2016.	3/23/16
Deposition of Ken Holley 30(b)(6), May 2, 2016.	5/2/16
Deposition of Kevin Johnson 30(b)(1), May 10, 2016.	5/10/16
Deposition of William Kennett 30(b)(1), March 8, 2016.	3/8/16
Deposition of Michael Kimble 30(b)(6), April 14, 2016.	4/14/16
Deposition of David Knutson 30(b)(6), May 18, 2016.	5/19/16
Deposition of Chia-Liang Lian 30(b)(1), April 27, 2016.	4/27/16
Deposition of Mark Luchsinger 30(b)(6), April 29, 2016.	4/29/16
Deposition of Stephen David Marvin 30(b)(6), April 27, 2016.	4/27/16
Deposition of Damien McCann 30(b)(6), May 3, 2016.	5/3/16
Deposition of Joseph McGann 30(b)(1), May 17, 2016.	5/17/16
Deposition of Scott Moses, May 10, 2016.	5/10/16
Deposition of Stacey Nutt, Ph.D. 30(b)(6), March 15, 2016.	3/15/16
Deposition of Alexander Ogan 30(b)(6), May 19, 2016.	5/19/16
Deposition of Adam Petryk 30(b)(6), May 18, 2016.	5/18/16
Deposition of Christopher Poag 30(b)(6), May 17, 2016.	5/17/16
Deposition of Anthony Pope 30(b)(6), May 19, 2016.	5/19/16
Deposition of Margaret Reynolds 30(b)(1), April 5, 2016.	4/5/16
Deposition of Nick Robinson 30(b)(6), May 19, 2016.	5/19/16
Deposition of Wafic Said 30(b)(1), May 12, 2016.	5/12/16
Deposition of Charles Sanford 30(b)(6), May 17, 2016.	5/17/16
Deposition of Steven Saruwatari 30(b)(6), April 13, 2016.	4/13/16
Deposition of David Schneider 30(b)(6), May 12, 2016.	5/12/16
Deposition of Javier Segovia 30(b)(6), May 16, 2016.	5/16/16
Deposition of Christopher Shale 30(b)(6), October 20, 2015.	10/20/15
Deposition of Craig Shaw 30(b)(6), April 20, 2016.	4/20/16
Deposition of Jeff Smith 30(b)(6), October 28, 2015.	10/28/15

Depositions	Date
Deposition of Ole Soeberg 30(b)(6), April 26, 2016.	4/26/16
Deposition of Christopher Staples 30(b)(6), March 22, 2016.	3/22/16
Deposition of Charles Stauffer 30(b)(1), May 13, 2016.	5/13/16
Deposition of Eva Sudol 30(b)(6), May 13, 2016.	5/13/16
Deposition of Todd Thompson 30(b)(6), February 18, 2016.	2/18/16
Deposition of Anthony van den Bosch 30(b)(6), May 13, 2016.	5/13/16
Deposition of Dean Weltman 30(b)(6), March 25, 2016.	3/25/16
Deposition of Brian Westhoff 30(b)(6), May 5, 2016.	5/5/16
Deposition of Wei Xiao 30(b)(6), May 5, 2016.	5/5/16
Deposition of Leo Zerilli 30(b)(6), May 12, 2016.	5/12/16

Expert Reports	Date
Expert Damages Report of Chad Coffman, CFA.	5/6/16
Professor Steven P. Feinstein, Ph.D., CFA, "Corrected Report on Market Efficiency."	10/23/15
Expert Report of Professor Steven P. Feinstein, Ph.D., CFA.	5/6/16
Expert Report of Professor Steven P. Feinstein, Ph.D., CFA.	5/6/16
Professor Steven P. Feinstein, Ph.D., CFA, "Rebuttal Report."	11/23/15
Expert Report of Professor Steven P. Feinstein, Ph.D., CFA.	5/6/16
Expert Report of John D. Finnerty, Ph.D.	5/6/16
Expert Report of Paul A. Gompers.	11/6/15
Reply Report of Paul A. Gompers.	12/8/15
Expert Report of Professor Christopher M. James	5/27/16
Expert Report of Vinita M. Juneja, Ph.D., "Regarding the Securities Act Claims."	5/6/16
Expert Report of Vinita M. Juneja, Ph.D., "Regarding the Exchange Act Claims."	5/6/16
Expert Report of Blaine F. Nye, Ph.D.	5/6/16

Produced Documents	Date
Deloitte, "Petróleo Brasileiro S.A. - Petrobras: Report on the Fair Value Measurement of Certain Assets," September 30, 2014.	9/30/14

Academic Literature, Public Press, and other Publically Available Documents	Date
"Causes and Effects of Discretionary Asset Write-Offs," by Jennifer Francis, J. Douglas Hanna, and Linda Vincent, Journal of Accounting Research 1996, Vol. 34 Supplement, pp. 117–134.	1996
Bruner, R.F. et al., 2002, "Introduction to 'Valuation in Emerging Markets'," Emerging Markets Review, 3, pp. 310–324.	12/1/02
Damodaran, Country Risk: Determinants, Measures and Implications – The 2015 Edition.	7/14/15
Dyck, A. and L. Zingales, 2004, "Private Benefits of Control: An International Comparison," Journal of Finance, Vol. LIX No. 2, pp. 537–600.	3/25/04
Gary, James H, Glenn E. Handwerk and Mark J. Kaiser, Petroleum Refining Technology and Economics, Fifth Edition, CRC Press: 2007.	3/5/07
Lee, C.M.C. and D. Ng, 2006, "Corruption and International Valuation: Does Virtue Pay?," Journal of Investing, p.1.	10/27/06
Pinkowitz, Lee et al., "Does the Contribution of Corporate Cash Holdings and Dividends to Firm Value Depend on Governance? A Cross-country Analysis," Journal of Finance, Vol. LXI, NO. 6., pp. 2725–2751.	12/1/06
Remsha, Michael, "Appraising an Oil Refinery in the 21st Century," 2009.	2009
Bekaert, Geert et al., "Political risk spreads," Journal of International Business Studies (2014) 45, pp. 471–493.	1/7/14
McKinsey & Company, T. Koller, M. Goedhart, and D. Wessels, "Valuation: Measuring and Managing the Value of Companies," Fifth Edition, (New Jersey: John Wiley & Sons, 2010).	2010
http://www.petrobras.com/	
Petrobras, "About Us," http://www.petrobras.com/en/about-us/ .	
Petrobras, "Privacy Policy," http://www.petrobras.com.br/en/privacy-policy/ .	
Petrobras, "Pre-Salt," http://www.petrobras.com.br/en/our-activities/performance-areas/oil-and-gas-exploration-and-production/pre-salt/ .	
Petrobras, "Deep future," http://www.petrobras.com/en/magazine/post/deep-future.htm .	
Petrobras, "Abreu e Lima Refinery," http://www.petrobras.com.br/en/our-activities/main-operations/refineries/abreu-e-lima-refinery.htm .	
Petrobras, "Rio de Janeiro Petrochemical Complex", http://www.petrobras.com.br/en/our-activities/main-operations/refineries/rio-de-janeiro-petrochemical-complex.htm .	
Petrobras, "Operations," http://www.petrobras.com/en/countries/u-s-a/operations/ .	
Petrobras, "Presidente Vargas (Repar)," http://www.petrobras.com.br/en/our-activities/main-operations/refineries/presidente-vargas-repar.htm .	
Petrobras, "2012–2016 Business and Management Plan, 2020 Petrobras Strategic Plan, 2012–2016 Business Plan," June 25, 2012, http://www.investidorpetrobras.com.br/en/presentations/business-management-plan .	
Petrobras, "2015–2019 Business & Management Plan," June 29, 2015, http://www.investidorpetrobras.com.br/en/presentations/business-management-plan .	
"BHP Billiton takes £5bn writedown on US oil assets as price slump takes toll," The Guardian, January 14, 2016, https://www.theguardian.com/business/2016/jan/15/bhp-billiton-takes-5bn-writedown-on-us-oil-assets-as-price-slump-takes-toll .	1/14/15
"BRAZIL: Businessman Alleges Alstom Paid Bribes for Brazil Project: Report," CorpWatch, May 29, 2008, http://www.corpwatch.org/article.php?id=15110 .	5/29/08
"Brazilian waxing and waning," The Economist, April 18th, 2016, http://www.economist.com/blogs/graphicdetail/2016/04/economic-backgrounder .	4/18/16
"Life after the commodity boom," The Economist, March 29, 2014, http://www.economist.com/news/americas/21599782-instead-crises-past-mediocre-growth-big-riskunless-productivity-rises-life .	3/29/14
"The crash of a titan," The Economist, February 28, 2015, http://www.economist.com/news/finance-and-economics/21645248-brazils-fiscal-and-monetary-levers-are-jammed-result-it-risks-getting-stuck .	2/28/15
"Construction progresses on Brazil's Abreu e Lima refinery," Oil & Gas Journal, December 19, 2013 http://www.ogj.com/articles/2013/12/construction-progresses-on-brazil-s-abreu-e-lima-refinery.html .	12/19/13
Claudio Gatti, Alstom at Center of Web of Bribery Inquiries, New York Times, March 29, 2010, http://www.nytimes.com/2010/03/30/business/global/30alstom.html?_r=0 .	3/29/10
Edgerton, Anna, "Petrobras Said Squeezed for Payment Five Years After Sale," Bloomberg, May 18, 2015, http://www.bloomberg.com/news/articles/2015-05-19/petrobras-said-squeezed-for-payment-five-years-after-share-sale .	5/18/15
Eeuwens, Karen, "Petrobras Says \$1.25b Pasadena Price Includes Legal Processes," Bloomberg News, May 23, 2014.	5/23/14
European Commission, "Brazil: Country Strategy Paper 2007-2013," May 14, 2007, http://eeas.europa.eu/brazil/csp/07_13_en.pdf .	5/14/07
EW Content Team, "Fortune Global 500: The World's Largest Companies By Revenues in 2013," Economy Watch, July 8, 2013, http://www.economywatch.com/fortune-global-500 .	7/8/13
Foreign Investment Advisory Service, "Legal, Policy and Administrative Barriers to Investment in Brazil," June 2001, http://czbrcham.org/yahoo_site_admin/assets/docs/PUBBrazilReportVolII.2525055.pdf .	June 2001
Freedom House, "Brazil," https://freedomhouse.org/report/freedom-world/2008/brazil .	6/30/05
Gaier, Rodrigo, "UPDATE 1-Petrobras says to cost \$4.3 bln to finish Comperj refinery," Reuters, August 27, 2015, http://www.reuters.com/article/brazil-petrobras-comperj-idUSL1N1121I20150827 .	8/27/15

Academic Literature, Public Press, and other Publically Available Documents	Date
Gray, Doug, "A Promise Made is a Debt Unpaid," The Rio Times, October 29, 2013, http://riotimesonline.com/brazil-news/opinion-editorial/editorial/a-promise-made-is-a-debt-unpaid/ .	10/29/13
Gray, Doug, "Brazil's Oil Sale Could Generate Trillions," The Rio Times, October 22, 2013, http://riotimesonline.com/brazil-news/front-page/brazils-oil-sale-could-generate-trillions/ .	10/22/13
Jeffris, Gerald, "Brazil Mulls Ways to Break Corruption, Shake a Bad Rap," Dow Jones International News, October 1, 2004.	10/1/14
Leahy, Joe, "Brazil: Petrobras must jump hurdles in race to exploit pre-salt layer," FT, May 15, 2013, https://next.ft.com/content/bfa4af22-b0d5-11e2-9f24-00144feabdc0 .	5/15/13
Kiernan, Paul, "Brazil's President, Petrobras CEO Defend No-Bid Oil Production Rights Deal," The Wall Street Journal, July 1, 2014, http://www.wsj.com/articles/petrobras-ceo-no-capital-increase-seen-before-2030-1404229898 .	7/1/14
KPMG, "Investing in Brazil: 'A Land of Opportunities,'" November 2012, https://www.kpmg.com/NL/nl/IssuesAndInsights/ArticlesPublications/Documents/PDF/High-Growth-Markets/Investing-in-Brazil-2012.pdf .	November 2012
Kumagai, Takeo, "INTERVIEW: Petrobras delays startup of Abreu e Lima refinery to 2014: CFO," S&P Global Platts, October 16, 2012, http://www.platts.com/latest-news/petrochemicals/tokyo/interview-petrobras-delays-startup-of-abreu-e-8822712 .	10/16/12
Leahy, Joe, "Brazil: Engine Trouble," FT, August 2, 2015, http://www.ft.com/intl/cms/s/0/c95a8176-31b2-11e5-8873-775ba7c2ea3d.html .	8/2/15
Lopez, Linette, "An oil slide is the last thing Brazil needs," Business Insider, December 1, 2014, http://www.businessinsider.com/oil-slide-puts-petrobras-in-danger-2014-12	12/1/14
McDonnell, Patrick J. "Brazil scandal needs scorecard," Los Angeles Times, June 19, 2007, http://articles.latimes.com/2007/jun/19/world/fg-scandal19 .	6/19/07
Patrick Sherwen, "Sherwen On Risk: Corruption Tarnishes Brazil's New-Found Respectability," Citywire – Wealth Manager, July 12, 2008, http://citywire.co.uk/wealth-manager/news/sherwen-on-risk-corruption-tarnishes-brazil-s-new-found-respectability/a308035 .	7/12/08
Pearson, Samantha, "Petrobras stays loyal to Brazil's ideals," FT, July 19, 2012.	7/19/12
Rabello, Maria Luiza, "Brazil Congress Makes Petrobras Sole Pre-Salt Operator," Bloomberg, December 2, 2010, http://www.bloomberg.com/news/articles/2010-12-02/brazilian-congress-allows-petrobras-to-be-sole-operator-of-pre-salt-fields .	12/2/10
Ragir, Alexander, "Mobius Says Petrobras Share Offering an 'Abomination,'" Bloomberg, September 24, 2010, http://www.bloomberg.com/news/articles/2010-09-24/mobius-calls-petrobras-offering-an-abomination-may-represent-a-bubble-	9/24/10
Sardenberg, Carlos Alberto, "The 'Lula Cost': Petrobras underperforms due to ex-President Lula's intervention and populism," Brazilian Bubble, July 6, 2012, http://brazilianbubble.com/the-lula-cost-petrobras-underperforms-due-to-ex-president-lulas-intervention-and-populism/ .	7/6/12
Siqueira, Leo, "PDVSA no longer partner in Petrobras Abreu e Lima refinery," ICIS, August 7, 2013, http://www.icis.com/resources/news/2013/08/07/9695221/pdvsa-no-longer-partner-in-petrobras-abreu-e-lima-refinery/ .	8/7/13
Stauffer, Caroline, "TIMELINE-Key moments in Brazil's Petrobras corruption probe," Reuters, August 14, 2015, http://www.reuters.com/article/brazil-petrobras-idUSL1N10031F20150814 .	8/14/15
Trevisani, Paulo, "Brazil Inflation Rate Exceeds Official Target Range in June," The Wall Street Journal, July 8, 2014, http://www.wsj.com/articles/brazil-inflation-rate-exceeds-official-target-range-in-june-1404845342 .	7/8/14
Willy H. Olsen, "Brazil's local content policy, strategy and ambitions," INTSOK, August 2013, www.intsok.com/content/download/249/1809/.../Brazil_Local_Content_Strategy.pdf .	August 2013
World Economic Forum, "The Global Competitiveness Report, 2013–2014," http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2013-14.pdf .	
World Economic Forum, "The Global Competitiveness Report, 2014–2015: Country/Economy Highlights," http://www3.weforum.org/docs/GCR2014-15/GCR_Highlights_2014-2015.pdf .	
"Full text: Dilma Rousseff interview," Financial Times, September 7, 2009.	9/7/09
"Delayed Coker Unit for Presidente Getulio Vargas Refinery (Repar)," Petróleo Brasileiro S.A. - Petrobras.	
Amora, Dimmi, "The TCU Says That They Have Found Overbilling in Petrobras Works," (Certified Translation) Brasilia, October 8, 2010.	10/8/10
Amora, Dimmi, "Petrobras says it has shown to TCU that there is no price charge above market," (Certified Translation) Brasilia, November 10, 2010.	11/10/10
Pardellas, Sergio "Suspicious donations: Largest donor campaign of the minister of cities, Mario Negromonte, and investigated by TCU for favoring irregular contract with state," (Certified Translation) Istoe, August 16, 2011.	8/16/11
"Planning in the electricity sector has flaws, experts say," (Certified Translation) Jornal Nacional.	1/7/13
Petrobras, "Comperj and Abreu e Lima responses to television program Fantástico, Globo TV," (Certified Translation) Facts and Data, January 6, 2013.	1/6/13
Schuffner, Claudia, "Complaint Involving Petrobras," (Certified Translation) Valor Economico, February 13, 2014.	2/13/14
Decat, Erich, "Petrobras knew about suspicions of bribery since 2012, says executive," (Certified Translation) Estadão de São Paulo, May 9, 2014.	5/9/14

Academic Literature, Public Press, and other Publically Available Documents	Date
Brandt, Fabio, "Sem estudos, refinaria multiplicou aditivos," (Certified Translation) Valor Economico, May 15, 2014.	5/15/14
Bevins, Vincent, "Petrobras shares fall, analysts point to poor management by Brazil," (Certified Translation) Los Angeles Times, July 9, 2014.	7/9/14
Sassine, Vinicius and Eduardo Bresciani, "Abreu e Lima: Companies suspected of paying bribes to Youssef gained R \$ 1.3 billion in additives," (Certified Translation) O Globo, July 12, 2014.	7/12/14
"Deviations in Abreu e Lima Seem Endless," (Certified Translation) Jornal O Globo, July 11, 2014.	7/11/14
Salomon, Marta, "Lula goes against TCU and releases funds for unauthorized work," (Certified Translation) Folha de S. Paulo, January 28, 2010.	1/28/10
Simão, Edna and Eugenia Lopes, "Lula Challenges the TCU and Places Petrobras Work Money Under Suspicion," (Certified Translation) Estadão de São Paulo, January 28, 2010.	1/28/10
Jungblut, Cristiane and Luiza Damé, "Lula releases works which TCU vetoed," (Certified Translation) Jornal O Globo, January 28, 2010	1/28/10
Machado, Daniela, "Lula sanctions 2010 Budget with two vetoes," (Certified Translation) Reuters, January 27, 2010.	1/27/10
"Pen stroke against TCU," (Certified Translation) Estadão de São Paulo, January 29, 2010.	1/29/10
Petrobras, "No irregularities in projects: response to newspapers," (Certified Translation) Facts and Data, January 28, 2010.	1/28/10
Petrobras, "Abreu e Lima Refinery: letter to Estadão," (Certified Translation) Facts and Data, January 29, 2010.	1/29/10
Petrobras, "Comperj Projects: response to Folha," (Certified Translation) Facts and Data, October 8, 2010.	10/8/10
Petrobras, "Repar and Abreu e Lima refinery projects: response to Folha of São Paulo," (Certified Translation) Facts and Data, November 9, 2010.	11/9/10
Petrobras, "Favoritism, letter to IstoE," (Certified Translation) Facts and Data, August 15, 2011.	8/15/11
Petrobras, "Abreu e Lima Refinery: clarification on the Fiscobras report of the TCU," (Certified Translation) Facts and Data, November 8, 2011.	11/8/11
Petrobras, "Transparency: Explanation for TV Cultura," (Certified Translation) Facts and Data, December 29, 2012.	12/29/12
Petrobras, "Comperj: Response to Jornal Nacional," (Certified Translation) Facts and Data, January 7, 2013.	1/7/13
Petrobras, "Purchase of refinery in Texas was according to market conditions, says Gabrielli," (Certified Translation) Facts and Data, August 7, 2013.	8/7/13
Petrobras, "Explanation regarding news of contract with Odebrecht Construction," (Certified Translation) Facts and Data, November 13, 2013.	11/13/13
Petrobras, "Explanation about SBM Offshore," (Certified Translation) Facts and Data, May 10, 2014.	5/10/14
Petrobras, "Abreu e Lima Refinery: letter to Valor Economico," (Certified Translation) Facts and Data, May 19, 2014.	5/19/14
Petrobras, "We have strict legal procedures for payments, including in the purchase of Pasadena," (Certified Translation) Facts and Data, May 23, 2014.	5/23/14
Petrobras, "Read out letter to the Los Angeles Times," (Certified Translation) Facts and Data, July 12, 2014.	7/12/14
Petrobras, "Abreu e Lima: letter to the newspaper O Globo," (Certified Translation) Facts and Data, July 14, 2012.	7/14/14
"Petrobras requested to have proceedings sealed," (Certified Translation) Estadão de São Paulo, November 9, 2013.	11/9/13
Valle, Sabrina, "Supervisory service was more expensive than labor," (Certified Translation) Estadão de São Paulo, November 9, 2013.	11/9/13
"Suspicious Costs in U.S. Refinery," (Certified Translation) Estadão de São Paulo, November 9, 2013.	11/9/13
Decision No. 2992/2010, TC 027.472/2009-4, from Nov. 9, 2010.	11/9/10
Decision No. 2877/2011, TC 028.136/2010-1, from Nov. 8, 2011.	11/8/11
Transcript of José Sérgio Gabrielli, 23rd Extraordinary Meeting of the Environment Committee, Consumer Protection and Supervision and Control, of the 3rd Session Legislative Meeting of the 54th Legislature, August 6, 2013).	8/6/13
Jornal da Cultura, "27/12/2012 2º Bloco," TV Cultura, December 27, 2012.	12/27/12
Ernst & Young, "Spotlight on oil and gas megaprojects," 2014	2014

SEC Filings	Date
Petrobras 20-F, "Form 20-F for the Fiscal Year Ended December 31, 2001," July 1, 2002.	7/1/02
Petrobras 6-K, "Petrobras Announces Third Quarter 2002 Results," November 15, 2002.	11/15/02
Petrobras 6-K, "Petrobras Announces Fourth Quarter 2002 Results," February 24, 2003.	2/24/03
Petrobras 6-K, "Petrobras Announces Fiscal Year of 2002 Results," March 19, 2003.	3/19/03
Petrobras 6-K, "Petrobras Announces First Quarter 2003 Results," May 20, 2003.	5/20/03
Petrobras 20-F, "Form 20-F for the Fiscal Year Ended December 31, 2002," June 19, 2003.	6/19/03
Petrobras 6-K, "Petrobras Reports Fourth Quarter 2003 Results," February 17, 2004.	2/17/04
Petrobras 6-K, "Minutes of the Ordinary and Extraordinary General Meeting," March 30, 2004.	3/30/04
Petrobras 6-K, "Petrobras Announces Fiscal Year 2003 Results," April 12, 2004.	4/12/04
Petrobras 20-F, "Form 20-F for the Fiscal Year Ended December 31, 2003," June 30, 2004.	6/30/04
Petrobras 6-K, "Petrobras Releases Second Quarter 2004 Results," August 17, 2004.	8/17/04
Petrobras 6-K, "New Plant Startups at REPLAN and REPAR refineries," November 12, 2004.	11/12/04
Petrobras 6-K, "Petrobras Announces Third Quarter 2004 Results," November 16, 2004.	11/16/04
Petrobras 6-K, February 28, 2005.	2/28/05
Petrobras 6-K, "Financial Statements: December 31, 2004 and 2003," March 18, 2005.	3/18/05
Petrobras 6-K, "Minutes of the Ordinary General Meeting," April 1, 2005.	4/1/05
Petrobras 6-K, "Petrobras Announces Fiscal Year 2004 Results," June 8, 2005.	6/8/05
Petrobras 20-F, "Form 20-F for the Fiscal Year Ended December 31, 2004," June 30, 2005.	6/30/05
Petrobras 6-K, "New CFO and Investor Relations Director," August 1, 2005.	8/1/05
Petrobras 6-K, "Petrobras Releases Second Quarter 2005 Results," August 16, 2005.	8/16/05
Petrobras 6-K, "Quarterly Information ITR," August 19, 2005.	8/19/05
Petrobras 6-K, "Executive Board Approve Refinery in the Northeast with PDVSA," September 30, 2005.	9/30/05
Petrobras 6-K, "Petrobras Releases Third-Quarter 2005 Results," November 14, 2005.	11/14/05
Petrobras 6-K, "Memorandum of Understanding for refining in the USA," November 17, 2005.	11/17/05
Petrobras 6-K, "Petrobras Announces Third Quarter of 2005 Results," November 23, 2005.	11/23/05
Petrobras 6-K, "Acquisition of Pasadena Refinery," February 3, 2006.	2/3/06
Petrobras 6-K, "Petrobras Announces Fiscal Year 2005 Fourth Quarter Results," February 21, 2006.	2/21/06
Petrobras 6-K, "Consolidated Financial Statements," March 21, 2006.	3/21/06
Petrobras 6-K, "Petrobras Announces Fiscal Year of 2005 Results," March 21, 2006.	3/21/06
Petrobras 6-K, "Petrobras announces site of Rio de Janeiro Petrochemical Complex," March 28, 2006.	3/28/06
Petrobras 6-K, "Petrobras Announces First Quarter 2006 Results," May 16, 2006.	5/16/06
Petrobras 6-K, "ITR - Quarterly Information - As of - 03/31/2006," June 26, 2006.	6/26/06
Petrobras 6-K, "Petrobras Announces First Quarter of 2006 Results," June 28, 2006.	6/28/06
Petrobras 20-F, "Form 20-F for the Fiscal Year Ended December 31, 2005," June 28, 2006.	6/28/06
Petrobras 6-K, "ITR - Quarterly Information - As of - 06/30/2006," August 25, 2006.	8/25/06
Petrobras 6-K, "Petrobras closes deal to acquire 50% of Pasadena Refinery," September 5, 2006.	9/5/06
Petrobras 6-K, "Petrobras Announces Results for the Third Quarter of 2006," November 13, 2006.	11/13/06
Petrobras 6-K, "ITR - Quarterly Information - As of - 09/30/2006," November 17, 2006.	11/17/06
Petrobras 6-K, "Petrobras Announces Third Quarter of 2006 Results," November 28, 2006.	11/28/06
Petrobras 6-K, "Consolidated Financial Statements," November 28, 2006.	11/28/06
Petrobras 6-K, "The Board of Directors approves changes to Petrobras System's Investment Budget for 2007," January	1/19/07
Petrobras 6-K, "Main Petrobras Projects in the Growth Acceleration Plan (GAP)," January 23, 2007.	1/23/07
Petrobras 6-K, "Petrobras Announces Results for the Fourth Quarter of 2006," March 12, 2007.	3/12/07
Petrobras 6-K, "Petrobras Announces Fiscal Year 2006 Results," April 10, 2007.	4/10/07
Petrobras 6-K, "Management's Report on Internal Control Over Financial Reporting," April 10, 2007.	4/10/07
Petrobras 6-K, "Petrobras Announces Results for the First Quarter of 2007," May 23, 2007.	5/23/07
Petrobras 6-K, "ITR - Quarterly Information - As of - 03/31/2007," June 8, 2007.	6/8/07
Petrobras 6-K, "Petrobras Announces First Quarter of 2007 Results," June 13, 2007.	6/13/07
Petrobras 20-F, "Form 20-F for the Fiscal Year Ended December 31, 2006," June 26, 2007.	6/26/07
Petrobras 6-K, "Petrobras Announces Results for the Second Quarter of 2007," August 15, 2007.	8/15/07
Petrobras 6-K, "ITR - Quarterly Information - As of - 06/30/2007," August 21, 2007.	8/21/07
Petrobras 6-K, "Petrobras Announces First Half of 2007 Results," September 6, 2007.	9/6/07
Petrobras 6-K, "Changes in the Board of Directors and in the Executive Board," September 24, 2007.	9/24/07
Petrobras 6-K, "Petrobras Announces Results for the Third Quarter of 2007," November 13, 2007.	11/13/07
Petrobras 6-K, "ITR - Quarterly Information - As of - 09/30/2007," November 21, 2007.	11/21/07
Petrobras 6-K, "Petrobras is the highest bidder for areas in the Santos Basin and for the biggest number of blocks in the	11/28/07
Petrobras 6-K, "Petrobras Announces Third Quarter of 2007 Results," November 29, 2007.	11/29/07
Petrobras 6-K, "Petrobras and PDVSA to incorporate mixed corporation in Brazil," December 14, 2007.	12/14/07
Petrobras 6-K, "Perspectives for 2008," December 21, 2007.	12/21/07

SEC Filings	Date
Petrobras 6-K, "Financial Statements - DFP Brazilian Corporate Law As of - 12/31/2007," March 4, 2008.	3/4/08
Petrobras 6-K, "Petrobras Announces Results for the Fourth Quarter of 2007," March 7, 2008.	3/7/08
Petrobras 6-K, "Consolidated Financial Statements," March 18, 2008.	3/18/08
Petrobras 6-K, "Petrobras Announces Fiscal Year of 2007 Results," March 18, 2008.	3/18/08
Petrobras 6-K, "Petrobras and PDVSA sign an equity partnership agreement at the Abreu e Lima Refinery," March 26,	3/26/08
Petrobras 20-F, "Form 20-F for the Fiscal Year Ended December 31, 2007," May 19, 2008.	5/19/08
Petrobras 6-K, "Petrobras Announces First Quarter of 2008 Results," May 22, 2008.	5/22/08
Petrobras 6-K, "Petrobras Announces Results for the First Quarter of 2008," May 27, 2008.	5/27/08
Petrobras 6-K, "Petrobras Announces Results for the Second Quarter of 2008," August 13, 2008.	8/13/08
Petrobras 6-K, "Independent accountants' review report on the Quarterly Information (ITR) of the Quarter ended June 30,	8/13/08
Petrobras 6-K, "Petrobras Announces First Half of 2008 Results," September 4, 2008.	9/4/08
Petrobras 6-K, "Pasadena Refinery Put Option," November 3, 2008.	11/3/08
Petrobras 6-K, "ITR - Quarterly Information - As of - 09/30/2008," November 12, 2008.	11/12/08
Petrobras 6-K, "Petrobras Announces Results for the Third Quarter of 2008," November 17, 2008.	11/17/08
Petrobras 6-K, "Petrobras Announces Third Quarter of 2008 Results," November 28, 2008.	11/28/08
Petrobras 6-K, "Consolidated Financial Statements," November 28, 2008.	11/28/08
Petrobras 6-K, "Business Plan 2009 – 2013," January 26, 2009.	1/26/09
Petrobras 6-K, "Petrobras incorporates the companies of the Rio de Janeiro Petrochemical Complex COMPERJ,"	2/5/09
Petrobras 6-K, "Petrobras Announces Results for the Fourth Quarter of 2008," March 9, 2009.	3/9/09
Petrobras 6-K, "Petrobras signs contracts for the Northeast Refinery," March 26, 2009.	3/26/09
Petrobras 6-K, "Consolidated Financial Statements," March 30, 2009.	3/30/09
Petrobras 6-K, "Petrobras Announces Fiscal Year of 2008 Results," March 30, 2009.	3/30/09
Petrobras 6-K, "Financial Statements: December 31, 2008 and 2007," March 31, 2009.	3/31/09
Petrobras 6-K, "Clarifications concerning certain press reports," April 7, 2009.	4/7/09
Petrobras 6-K, "Put Option for the Pasadena Refinery," April 17, 2009.	4/17/09
Petrobras 6-K, "Minutes of the Ordinary and Extraordinary General Meetings of Petroleo Brasileiro S.A. Petrobras, Held	5/6/09
Petrobras 6-K, "Petrobras Announces Results for the First Quarter of 2009," May 20, 2009.	5/20/09
Petrobras 20-F, "Form 20-F for the Fiscal Year Ended December 31, 2008," May 22, 2009.	5/22/09
Petrobras 6-K, "Consolidated Financial Statements," June 1, 2009.	6/1/09
Petrobras 6-K, "Petrobras Announces First Quarter of 2009 Results," June 1, 2009.	6/1/09
Petrobras 6-K, "ITR - Quarterly Information - As of - 03/31/2009," June 8, 2009.	6/8/09
Petrobras 6-K, "The Best Investor Relations Program for Retail Investors Award," June 23, 2009.	6/23/09
Petrobras 6-K, "Closing of the R\$ 25 billion Loan with BNDES," July 31, 2009.	7/31/09
Petrobras 6-K, "Clarifications about Recent News: Downstream Investments," August 10, 2009.	8/10/09
Petrobras 6-K, "Petrobras Announces Results for the Second Quarter of 2009," August 17, 2009.	8/17/09
Petrobras 6-K, "ITR - Quarterly Information - As of - 06/30/2009," August 18, 2009.	8/18/09
Petrobras 6-K, "Clarification about news: Abreu e Lima Refinery," August 27, 2009.	8/27/09
Petrobras 6-K, "Petrobras Announces First Half of 2009 Results," September 9, 2009.	9/9/09
Petrobras 6-K, "Consolidated Financial Statements," September 10, 2009.	9/10/09
Petrobras 6-K, "Petrobras and PDVSA agree with the conditions to build Refinery," October 30, 2009.	10/30/09
Petrobras 6-K, "ITR - Quarterly Information - As of - 09/30/2009," November 19, 2009.	11/19/09
Petrobras 6-K, "ITR - Quarterly Information - As of - 09/30/2009," November 27, 2009.	11/27/09
Petrobras 6-K, "Petrobras Announces Third Quarter of 2009 Results," November 27, 2009.	11/27/09
Petrobras 6-K, "Petrobras Announces Results for the Third Quarter of 2009," November 27, 2009.	11/27/09
Petrobras 6-K, "Consolidated Financial Statements," November 27, 2009.	11/27/09
Petrobras 6-K, "Execution of contracts for the Abreu e Lima Refinery," December 3, 2009.	12/3/09
Petrobras 6-K, "Financing to PetroquímicaSuape," December 18, 2009.	12/18/09
Petrobras 6-K, "Petrochemical Stockholding Restructuring," January 22, 2010.	1/22/10
Petrobras 6-K, "US Court reassert the decision about Pasadena Refinery," March 15, 2010.	3/15/10
Petrobras 6-K, "Petrobras Announces Fiscal Year of 2009 Results," March 25, 2010.	3/25/10
Petrobras 6-K, "Financial Statements: December 31, 2009 and 2008," March 25, 2010.	3/25/10
Petrobras 6-K, "Consolidated Financial Statements," March 26, 2010.	3/26/10
Petrobras 6-K, "New member for the Minority Shareholder's Committee," March 29, 2010.	3/29/10
Petrobras 6-K, "Fourth Quarter and 2009 Results," April 13, 2010.	4/13/10
Petrobras 6-K, "Cooperation Agreement with China," April 16, 2010.	4/16/10
Petrobras 20-F, "Form 20-F for the Fiscal Year Ended December 31, 2009," May 20, 2010.	5/20/10
Petrobras 6-K, "Results for the First Quarter of 2010," May 24, 2010.	5/24/10
Petrobras 6-K, "ITR - Quarterly Information - As of - 03/31/2010," May 24, 2010.	5/24/10
Petrobras 6-K, "Clarification about Comperj Investments," May 25, 2010.	5/25/10

SEC Filings	Date
Petrobras 6-K, "Consolidated Financial Statements," May 28, 2010.	5/28/10
Petrobras 6-K, "Petrobras Announces First Quarter of 2010 Results," May 28, 2010.	5/28/10
Petrobras 6-K, "2010 – 2014 Business Plan," June 23, 2010.	6/23/10
Petrobras 6-K, "Consolidated Financial Statements," August 25, 2010.	8/25/10
Petrobras 6-K, "Petrobras Announces First Half of 2010 Results," August 26, 2010.	8/26/10
Petrobras 6-K, September 3, 2010.	9/3/10
Petrobras 6-K, September 7, 2010.	9/7/10
Petrobras 6-K, "Results for the First Half of 2010," September 16, 2010.	9/16/10
Petrobras 6-K, "ITR - Quarterly Information - As of - 06/30/2010," September 30, 2010.	9/30/10
Petrobras 6-K, "Results for the Third Quarter of 2010," November 19, 2010.	11/19/10
Petrobras 6-K, "ITR - Quarterly Information - As of - 09/30/2010," November 19, 2010.	11/19/10
Petrobras 6-K, "Petrobras Announces Third Quarter of 2010 Results," November 24, 2010.	11/24/10
Petrobras 6-K, "Consolidated Financial Statements," November 24, 2010.	11/24/10
Petrobras 6-K, "Incorporation of Comperj Petroquímicos Básicos S.A. and Comperj PET S.A.," December 13, 2010.	12/13/10
Petrobras 6-K, "Notice of Extraordinary Shareholders' Meeting," December 23, 2010.	12/23/10
Petrobras 6-K, "Resolutions of the Extraordinary General Meeting," January 31, 2011.	1/31/11
Petrobras 6-K, "Contracting of the construction and chartering of drilling rigs with EAS and Sete Brasil S.A.," February 11,	2/11/11
Petrobras 6-K, "Consolidated Financial Statements," March 17, 2011.	3/17/11
Petrobras 6-K, "Petrobras Announces Fiscal Year of 2010 Results," March 17, 2011.	3/17/11
Petrobras 6-K, "Ordinary General Meeting and Extraordinary General Meeting," April 7, 2011.	4/7/11
Petrobras 6-K, "Financial Statements: December 31, 2010 and 2009," April 28, 2011.	4/28/11
Petrobras 6-K, "Consolidated Financial Statements," May 26, 2011.	5/26/11
Petrobras 6-K, "Petrobras Announces First Quarter of 2011 Results," May 26, 2011.	5/26/11
Petrobras 20-F, "Form 20-F for the Fiscal Year Ended December 31, 2010," May 26, 2010.	5/26/11
Petrobras 6-K, "Results for the First Quarter of 2011," May 31, 2011.	5/31/11
Petrobras 6-K, May 31, 2011.	5/31/11
Petrobras 6-K, "Extraordinary General Meeting," August 2, 2011.	8/2/11
Petrobras 6-K, "Results for the First Half of 2011," August 17, 2011.	8/17/11
Petrobras 6-K, "Consolidated Financial Statements," August 25, 2011.	8/25/11
Petrobras 6-K, "Petrobras Announces First Half of 2011 Results," August 25, 2011.	8/25/11
Petrobras 6-K, "Clarification on News: Abreu Lima Refinery," September 13, 2011.	9/13/11
Petrobras 6-K, "Information about partnership at Abreu e Lima Refinery," October 4, 2011.	10/4/11
Petrobras 6-K, "Consolidated Financial Statements," November 22, 2011.	11/22/11
Petrobras 6-K, "Petrobras Announces First Quarter of 2011 Results," November 22, 2011.	11/22/11
Petrobras 6-K, "ITR - Quarterly Information," November 23, 2011.	11/23/11
Petrobras 6-K, "Extraordinary General Meeting," November 25, 2011.	11/25/11
Petrobras 6-K, "Information concerning the partnership at Abreu Lima Refinery," November 30, 2011.	11/30/11
Petrobras 6-K, "Acquisition of Comperj Utilities Center," December 27, 2011.	12/27/11
Petrobras 6-K, "New Petrobras CEO," February 10, 2012.	2/10/12
Petrobras 6-K, "Extraordinary General Meeting," February 14, 2012.	2/14/12
Petrobras 6-K, "Clarification about 4Q11 Results," February 16, 2012.	2/16/12
Petrobras 6-K, "Ordinary General Meeting and Extraordinary General Meeting," February 21, 2012.	2/21/12
Petrobras 6-K, "Management's Report on Internal Control Over Financial Reporting," February 29, 2012.	2/29/12
Petrobras 6-K, "Petrobras Announces Fourth Quarter and Fiscal Year of 2011 Results," February 29, 2012.	2/29/12
Petrobras 6-K, "Financial Statements: December 31, 2011 and 2010," February 29, 2012.	2/29/12
Petrobras 6-K, "Petrobras Announces Fiscal Year of 2011 Results," February 29, 2012.	2/29/12
Petrobras 20-F, "Form 20-F for the Fiscal Year Ended December 31, 2011," April 2, 2011.	4/2/12
Petrobras 6-K, "First Quarter of 2012 Results," May 16, 2012.	5/16/12
Petrobras 6-K, "First Quarter of 2012 Results," May 16, 2012.	5/16/12
Petrobras 6-K, "ITR - Quarterly Information," May 17, 2012.	5/17/12
Petrobras 6-K, "Consolidated Financial Statements," May 17, 2012.	5/17/12
Petrobras 6-K, "2012 – 2016 Business Plan," June 14, 2012.	6/14/12
Petrobras 6-K, "Execution of Agreement: Pasadena Refinery," July 2, 2012.	7/2/12
Petrobras 6-K, "First Half of 2012 Results," August 8, 2012.	8/8/12
Petrobras 6-K, "ITR - Quarterly Information," August 8, 2012.	8/8/12
Petrobras 6-K, "First Half of 2012 Results," August 10, 2012.	8/10/12
Petrobras 6-K, "Consolidated financial statements," August 10, 2012.	8/10/12
Petrobras 6-K, "Guaranty," October 1, 2012.	10/1/12
Petrobras 6-K, "Third Quarter of 2012 Results," October 29, 2012.	10/29/12

SEC Filings	Date
Petrobras 6-K, "Third Quarter of 2012 Results," October 30, 2012.	10/30/12
Petrobras 6-K, "Consolidated Financial Statements," October 30, 2012.	10/30/12
Petrobras 6-K, "Quarterly Information - ITR," October 30, 2012.	10/30/12
Petrobras 6-K, "Acquisition of Nitrogenated Fertilizers Plant in Paraná," December 18, 2012.	12/18/12
Petrobras 6-K, "Financial Statements: December 31, 2012 and 2011," February 6, 2013.	2/6/13
Petrobras 6-K, "Fourth Quarter of 2012 Results," February 6, 2013.	2/6/13
Petrobras 6-K, "Consolidated Financial Statements," February 6, 2013.	2/6/13
Petrobras 6-K, "Fourth Quarter of 2012 Results," February 6, 2013.	2/6/13
Petrobras 6-K, "2013 – 2017 Business & Management Plan," March 18, 2013.	3/18/13
Petrobras 6-K, "Annual General Meeting Extraordinary General Meeting," March 27, 2013.	3/27/13
Petrobras 20-F, "Form 20-F for the Fiscal Year Ended December 31, 2012," April 29, 2012.	4/29/13
Petrobras 6-K, "Quarterly Information – ITR On March 31, 2013 and report on review of Quarterly information," April 30,	4/30/13
Petrobras 6-K, "First Quarter of 2013 Results," April 30, 2013.	4/30/13
Petrobras 6-K, "Guaranty," May 20, 2013.	5/20/13
Petrobras 6-K, "Restructuring of Petrobras' Petrochemical Portfolio," June 17, 2013.	6/17/13
Petrobras 6-K, "Quarterly Information - ITR," August 13, 2013.	8/13/13
Petrobras 6-K, "Notice of Meeting," September 3, 2013.	9/3/13
Petrobras 6-K, "Extraordinary General Meeting," September 30, 2013.	9/30/13
Petrobras 6-K, "Resolutions of Extraordinary General Meeting," October 1, 2013.	10/1/13
Petrobras 6-K, "Minutes of the Extraordinary General Meeting of Petroleo Brasileiro S.A. - Petrobras, Held On	10/10/13
Petrobras 6-K, "Consolidated Financial Statements," October 28, 2013.	10/28/13
Petrobras 6-K, "Merger of RNEST," October 28, 2013.	10/28/13
Petrobras 6-K, "Quarterly Information - ITR," October 28, 2013.	10/28/13
Petrobras 6-K, "Notice of Meeting," November 14, 2013.	11/14/13
Petrobras 6-K, "Extraordinary General Meeting," November 27, 2013.	11/27/13
Petrobras 6-K, "Results of Extraordinary General Meeting," December 17, 2013.	12/17/13
Petrobras 6-K, "Start- up of Platform P- 55 in Roncador field," January 2, 2014.	1/2/14
Petrobras 6-K, "Guaranty," January 14, 2014.	1/14/14
Petrobras 6-K, "Financial Statements: December 31, 2013 and 2012," February 26, 2014.	2/26/14
Petrobras 6-K, "Fourth Quarter of 2013 Results," February 26, 2014.	2/26/14
Petrobras 6-K, "Petrobras 2030 Strategic Plan and 2014 – 2018 Business and Management Plan," February 26, 2014.	2/26/14
Petrobras 6-K, "Consolidated financial statements," February 26, 2014.	2/26/14
Petrobras 6-K, "Petrobras 2013 Results and New Pre- salt Record: 412,000 barrels of oil per day," March 6, 2014.	3/6/14
Petrobras 6-K, "Guaranty," March 17, 2014.	3/17/14
Petrobras 6-K, "Ordinary General Meeting Extraordinary General Meeting," April 3, 2014.	4/3/14
Petrobras 20-F, "Form 20-F for the Fiscal Year Ended December 31, 2013," April 30, 2013.	4/30/14
Petrobras 6-K, May 12, 2014.	5/12/14
Petrobras 6-K, "First Quarter of 2014 Results," May 12, 2014.	5/12/14
Petrobras 6-K, "First Half of 2014 Results," August 11, 2014.	8/11/14
Petrobras 6-K, "Quarterly Information - ITR," August 11, 2014.	8/11/14
Petrobras 6-K, "First Half of 2014 Results," August 11, 2014.	8/11/14
Petrobras 6-K, "Petrobras Third Quarter 2014 Operational Performance," November 17, 2014.	11/17/14
Petrobras 6-K, "Abreu e Lima Refinery initiates Atmospheric Distillation Unit start- up procedure," November 21, 2014.	11/21/14
Petrobras 6-K, "Extraordinary General Meeting: Manual for Shareholder's Participation," December 23, 2014.	12/23/14
Petrobras 6-K, "Third Quarter of 2014 Results Not Reviewed by Independent Auditors," January 28, 2015.	1/28/15
Petrobras 6-K, "Names of candidates appointed by non- controlling shareholder to the Board of Directors," April 13,	4/13/15
Petrobras 6-K/A, "Consolidated financial statements," April 23, 2015.	4/23/15
Petrobras 424(b)2, "Fourth Quarter of 2014 Results," April 23, 2015.	4/23/15
Petrobras 424(b)2, "Financial Statements: December 31, 2014 and 2013," April 23, 2015.	4/23/15
Petrobras 424(b)2, "Consolidated Interim Financial Statements," April 23, 2015.	4/23/15
Petrobras 424(b)2, "Fourth Quarter of 2014 Results," April 23, 2015.	4/23/15
Petrobras 424(b)2, "Form 20-F for the Fiscal Year Ended December 31, 2014," May 15, 2014.	5/15/15
Petrobras 6-K, "First Quarter of 2015 Results," May 18, 2015.	5/18/15
Petrobras 424(b)2, "2015 – 2019 Business and Management Plan," June 29, 2015.	6/29/15
Petrobras 6-K/A, "Minutes of the Annual and Extraordinary General Meetings of the Petroleo Brasileiro S.A.-Petrobras,"	7/8/15
Petrobras 6-K/A, "Minutes of Special Meeting of Shareholders of Petroleo Brasileiro S.A.-Petrobras, Held on May 25th,	7/8/15
Petrobras 6-K, "First Quarter of 2014 Results," May 12, 2014.	5/12/14
Petrobras 6-K, May 12, 2014.	5/12/14
Petrobras 6-K, "Form 20-F for the Fiscal Year Ended December 31, 2013," November 17, 2014.	11/17/14

SEC Filings	Date
Petrobras 6-K, "Abreu e Lima Refinery initiates Atmospheric Distillation Unit start- up procedure," November 21, 2014.	11/21/14
Petrobras 20-F, April 28, 2016.	4/28/16
Petrobras Annual Report, "Consolidated Financial Statements As Of December 31, 2014, 2013 And 2012 With Report Of	4/22/15
Petrobras 6-K/A, "Financial Statements," March 19, 2016.	3/19/16
Petrobras Annual Report, "Financial Statements," March 21, 2016.	3/21/16
Petrobras Interim Report, "Consolidated Interim Financial Statements As Of September 30, 2014 And Report On Review	4/22/15
Petrobras Interim Report, "Consolidated Financial Statements At June 30, 2014 With Report Of Independent Registered	8/11/14
Petrobras 424(b)2, "Consolidated Financial Statements As Of March 31, 2015, With Report Of Independent Registered	5/15/15
Petrobras 6-K/A, "Fourth Quarter Of 2014 Results," April 22, 2015.	4/22/15
Petrobras 6-KA, "Financial Statements December 31, 2011 And 2010," April 5, 2012.	4/5/12
Petrobras 6-KA, "2012 – 2016 Business Plan," June 15, 2012.	6/15/12
Petrobras 424B2, "Preliminary Prospectus Supplement (Subject To Completion) Dated March 10, 2014," March 10,	3/10/14
Petrobras 424B2, "Preliminary Prospectus Supplement (Subject To Completion) Dated September 3, 2010," September	9/3/10
Petrobras 424B2, "Prospectus Supplement (To Prospectus Dated December 11, 2009)," September 28, 2010.	9/28/10
Petrobras 424B2, "Preliminary Prospectus Supplement (Subject To Completion) Dated January 7, 2014," January 7,	1/7/14
Petrobras 424B2, "Prospectus Supplement (To Prospectus Dated August 29, 2012)," January 9, 2014.	1/9/14
Petrobras 424B2, "Prospectus Supplement (To Prospectus Dated August 29, 2012)," March 11, 2014.	3/11/14
Petrobras F-3ASR, "Registration Statement Under The Securities Act Of 1933," August 29, 2012.	8/29/12
Petrobras 424B2, "Preliminary Prospectus Supplement (Subject To Completion) Dated January 18, 2010," January 18,	1/18/11
Petrobras 424B2, "Prospectus Supplement (To Prospectus Dated December 11, 2009)," January 21, 2011.	1/21/11
Petrobras 6-KA, "Report Of Foreign Private Issuer Pursuant To Rule 13A- 16 Or 15D- 16 Of The Securities Exchange	3/10/14
Petrobras 6-KA, "Clarification On News," September 9, 2014.	9/9/14
Petrobras 424(b)2, "Extraordinary General Meeting," May 25, 2015.	5/25/15
Petrobras 6-KA, "Petrobras Prices Global Offering," September 23, 2010.	9/23/10
Petrobras 6-K/A, "Petróleo Brasileiro S.A. – Petrobras Consolidated Interim Financial Statements As Of September 30,	8/13/15
Petrobras 6-K, "Report Of Foreign Private Issuer Pursuant To Rule 13A- 16 Or 15D- 16 Under The Securities Exchange	2/1/12

Analyst Reports	Date
ATIVA, "Dados Operacionais Piores No 2T11, Mas Ja Esperados," August 16, 2011.	8/16/11
Banco Fator Corretora, "2Q11 Result," August 16, 2011.	8/16/11
Bank of America, "Petrobras right-sizes the budget," July 25, 2011.	7/25/11
Bank of America, "First look at new 2012-2016 plan: Sober, but credible," June 14, 2012.	6/14/12
Bank of America, "Output hurt by maintenance again: Total output -2.6% YoY," July 30, 2012.	7/30/12
Bank of America, "2Q12 Preview: Looking for weakness," July 31, 2012.	7/31/12
Bank of America, "Hitting bottom: Q2 weak and messy, but better than it looks," August 5, 2012.	8/5/12
Bank of America, "Adj. 2012-2013 ests. on weak 2Q12; Conference Call notes," August 6, 2012.	8/6/12
Bank of America, "July output in line; maintenance leads to -1% YoY," August 30, 2012.	8/30/12
Bank of America, "August output hurt again by maintenance stoppages," October 1, 2012.	10/1/12
Bank of America, "Jupiter rising: Oil discovery adds long-term potential," October 10, 2012.	10/10/12
Bank of America, "3Q12 saw sharp improvement vs. weak Q2, though flat YoY," October 28, 2012.	10/28/12
Bank of America, "Assessing the read-through from BG to Petrobras," October 31, 2012.	10/31/12
Bank of America, "Unfavorable court ruling on withholding tax to be appealed," November 5, 2012.	11/5/12
Bank of America, "Is it too late for px increase Downgrade to Neutral," November 12, 2012.	11/12/12
Bank of America, "Recovery in production after a very weak September," November 26, 2012.	11/26/12
Bank of America, "Slight improvement in November output," January 3, 2013.	1/3/13
Bank of America, "Risks of energy tightness real, but outcome could be positive," January 10, 2013.	1/10/13
Bank of America, "Flat YE2012 reserves, with oil growth offsetting gas decline," January 11, 2013.	1/11/13
Bank of America, "Long-awaited price increase arrives, but seems muted," January 30, 2013.	1/30/13
Bank of America, "Weak 4Q, hurt by cost pressures, weak output trends," January 30, 2013.	1/30/13
Bank of America, "Weak results, with soft op inc offset by one-time finl gains," February 5, 2013.	2/5/13
Bank of America, "Is it a 2014 story or 2017 Lower PO on common share," February 8, 2013.	2/8/13
Bank of America, "Weak January output, hurt by maintenance and op. problems," February 27, 2013.	2/27/13
Bank of America, "Surprise 5% rise in diesel px takes dsct to lowest in 12 mos," March 5, 2013.	3/5/13
Bank of America, "Thoughts on upcoming plan Key points to watch," March 13, 2013.	3/13/13
Bank of America, "Almost Franciscan Plan keeps capex and output targets," March 17, 2013.	3/17/13
Bank of America, "Further business plan details presented in recent meetings," March 25, 2013.	3/25/13
Bank of America, "Maintenance hits Feb. oil output hard -9% YoY," April 1, 2013.	4/1/13
Bank of America, "Solvency Risk Can the Latam oils survive," April 8, 2013.	4/8/13
Bank of America, "1Q13 pre Expect weakness on weak prod. - strong imports," April 25, 2013.	4/25/13
Bank of America, "Closing in on growth Moving to Buy," April 29, 2013.	4/29/13
Bank of America, "11th bidding round in Brazil a success with 142 blocks sold," May 14, 2013.	5/14/13
Bank of America, "Output remains weak YoY, but improved vs. March," June 3, 2013.	6/3/13
Bank of America, "Substantive progress on divestment CalGems notes," June 17, 2013.	6/17/13
Bank of America, "Fast-track to pre-salt Bid Rd. Draft details due next week," June 19, 2013.	6/19/13
Bank of America, "No surprise maintenance weighs on production again," July 3, 2013.	7/3/13
Bank of America, "Continued challenges Lower PO and 2013-2014 ests. on FX," July 7, 2013.	7/7/13
Bank of America, "Start of something big June output +5% vs. May; +1% YoY," August 1, 2013.	8/1/13
Bank of America, "Signs of light: Q2 ahead of est. on better refining," August 11, 2013.	8/11/13
Bank of America, "Increasing headwinds; Adj.	8/26/13
Bank of America, "Weak July output expected waiting for more post-Sept," September 3, 2013.	9/3/13
Bank of America, "Desinvestimento - Divestment goal; Almost half way with US\$380mn in Colombia," September 16,	9/16/13
Bank of America, "Libra - Only 11 Companies indicate interest," September 19, 2013.	9/19/13
Bank of America, "Weak Aug. Output, but edging up; waiting for 4Q inflection," October 1, 2013.	10/1/13
Bank of America, "Libra - Guide to the Libra Auction: Assessing risks and returns," October 14, 2013.	10/14/13
Bank of America, "Notes from Brasilia: Libra, px increases, and other things," October 16, 2013.	10/16/13
Bank of America, "Despite near-term challenges, we remain constructive," October 17, 2013.	10/17/13
Bank of America, "Renda Fixa - Three keys to reducing leverage at Petrobras," October 18, 2013.	10/18/13
Bank of America, "Libra - One cloud lifted: Libra done with min. profit oil of 41.65%," October 21, 2013.	10/21/13
Bank of America, "Q3: Pricing and FX effects should drive mixed quarter," October 22, 2013.	10/22/13
Bank of America, "3T13 - Signs of move to more positive px policy," October 27, 2013.	10/27/13
Bank of America, "3Q13 conf. call confirms positive operational trends," October 28, 2013.	10/28/13
Bank of America, "Renda Fixa - Weak 3Q13, higher leverage; waiting for a turnaround in 4Q," October 28, 2013.	10/28/13
Bank of America, "US\$2.6 bn. asset sale in Peru to help balance sheet," November 13, 2013.	11/13/13
Bank of America, "Board meeting to discuss px formula postponed to Nov.29," November 21, 2013.	11/21/13
Bank of America, "12th Bidding Round concluded: Petrobras main participant," November 28, 2013.	11/28/13
Bank of America, "No direct pricing formula, but solid gasoline/diesel price rise," December 1, 2013.	12/1/13
Bank of America, "Oct. crude output ahead of est.: +1.0% YoY; -1.0% vs. Sept," December 3, 2013.	12/3/13
Bank of America, "Is conviction enough. Notes from meeting with management," December 16, 2013.	12/16/13
Bank of America, "Franco, Tupi Sul, and Carioca declared commercial," December 20, 2013.	12/20/13

Analyst Reports	Date
Bank of America, "Nov. crude output ahead of est.; flat vs. Oct.; -0.6% YoY," January 2, 2014.	1/2/14
Bank of America, "Lower PO to reflect slightly more cautious earnings ests," January 9, 2014.	1/9/14
Bank of America, "YE2013 rsvs. up slightly YoY; focus remains on bal. sheet," January 14, 2014.	1/14/14
Bank of America, "Inside the barrel: What does re-valuation of 5bn bbls mean," January 20, 2014.	1/20/14
Bank of America, "Adj. 2014-2015 estimates on lower FX forecast," January 30, 2014.	1/30/14
Bank of America, "Dec. crude slightly below est.; +0.4% seq.; All eyes on 2014," January 31, 2014.	1/31/14
Bank of America, "2014-2018 Strategic Plan preview: Focus on funding," February 23, 2014.	2/23/14
Bank of America, "Imp. positive shift in Strategic	2/26/14
Bank of America, "Soft (but exp.) Jan. output; dom. crude -2.4% MoM YoY," March 6, 2014.	3/6/14
Bank of America, "Conference take-away: More	3/21/14
Bank of America, "Positive signals from management presentation," March 24, 2014.	3/24/14
Bank of America, "Flat Feb. output; we exp. better trends in Mar-Apr," April 1, 2014.	4/1/14
Bank of America, "Oil & Gas Conf Feedback: High interest, low conviction," April 3, 2014.	4/3/14
Bank of America, "Q1 Preview: Results should be leveraged to growth trends," April 28, 2014.	4/28/14
Bank of America, "March dom. output +4.3% YoY; trends begin to improve," May 2, 2014.	5/2/14
Bank of America, "1Q14: Better than expected; 2nd well connected to Lula NE," May 12, 2014.	5/12/14
Bank of America, "Notes from CalGems: Waiting for the pickup in output," June 9, 2014.	6/9/14
Bank of America, "Lula: Cernambi SPE taxes: Risks to resolving dispute with ANP," June 11, 2014.	6/11/14
Bank of America, "World Cup Special - New pre-salt deal NPV pos. but w/ risks," June 24, 2014.	6/24/14
Bank of America, "Meeting with CEO provides further details on 10-15bn boe," June 29, 2014.	6/29/14
Bank of America, "May dom. output +4.4% YoY on pre-salt well connections," July 1, 2014.	7/1/14
Bank of America, "What matters. Oil vs. Politics; Brazil vs. Argentina-Colombia," July 20, 2014.	7/20/14
Bank of America, "June dom. crude prod. +1.5% YoY; last tough comp for 2014," July 21, 2014.	7/21/14
Bank of America, "Showing off - July prod. +8.6%; getting used to high growth - BUY - Brazil," August 11, 2014.	8/11/14
Bank of America, "There is still upside for Brazilians SOEs," August 18, 2014.	8/18/14
Bank of America, "Price Objective Change - Raising PO to \$24.00-\$24.50 per ADR on improving visibility," August 28,	8/28/14
Bank of America, "First thoughts on outline of possible Marina energy policy," August 31, 2014.	8/31/14
Bank of America, "August Output - strong trends confirmed," September 15, 2014.	9/15/14
Bank of America, "Trying to stay balanced in very rough seas," September 15, 2014.	9/15/14
Bank of America, "Tough transitions - Navigating a period of important changes," September 30, 2014.	9/30/14
Bank of America, "Hat sinking feeling - Facing a lower oil price outlook," October 14, 2014.	10/14/14
Bank of America, "September output +7.0% YoY; Pre-salt record of 618kbpd," October 15, 2014.	10/15/14
Bank of America, "Oils - Weak oil prices should set the tone for weak 3Q14 - Americas," October 17, 2014.	10/17/14
Bank of America, "LatAm Energy - Impact of lower oil prices on LatAm oil & gas producers - Latin America," October	10/21/14
Bank of America, "Moody's downgrades Petrobras to Baa2," October 22, 2014.	10/22/14
Bank of America, "PETR3 BZ - Petrobras ON - Moment of truth - Assessing the risks - BUY," October 24, 2014.	10/24/14
Bank of America, "Oils - Assessing the impact of election results - Americas," October 27, 2014.	10/27/14
Bank of America, "Oils - Adj. POs and Ests. for Petrobras and Braskem on weaker Real fcst," October 29, 2014.	10/29/14
Bank of America, "Petrobras ON - That wasn't so difficult +3.0% gasoline; +5.0% diesel - BUY," November 6, 2014.	11/6/14
Bank of America, "What if oil stays lower for longer - PBR-PRE most hurt," November 10, 2014.	11/10/14
Bank of America, "October total output +11% YoY; domestic crude +8.5%," November 11, 2014.	11/11/14
Bank of America, "Accounting, prices and BRL uncertainties - move to UW 30%," November 14, 2014.	11/14/14
Bank of America, "Downgrade to Neutral reduce POs on reporting uncertainty," November 14, 2014.	11/14/14
Bank of America, "Where to from here - Key issue is financing over medium term," November 16, 2014.	11/16/14
Bank of America, "Global Energy Conference - Oil px.capex front and center," November 17, 2014.	11/17/14
Bank of America, "Debt issues-timing of audited financials key in Conf Call," November 18, 2014.	11/18/14
Bank of America, "Petrobras announces that SEC investigation is underway," November 25, 2014.	11/25/14
Bank of America, "Focused on rationally overcoming NT obstacles," December 1, 2014.	12/1/14
Bank of America, "What to expect from 3Q14 unaudited results," December 10, 2014.	12/10/14
Bank of America, "Partial Q3 release - Some pos. trends; FCF goal in 2015," December 15, 2014.	12/15/14
Bank of America, "Production Monitor - November," December 29, 2014.	12/29/14
Bank of America, "In the middle of the storm - Risks remain high for now," January 6, 2015.	1/6/15
Bank of America, "2015 Year Ahead - Expecting a year filled with big changes," January 8, 2015.	1/8/15
Bank of America, "YE2014 reserves up slightly YoY, with Brazil Growth-Intl drop," January 13, 2015.	1/13/15
Bank of America, "Getting ugly - adjusting to an unhappy time," January 15, 2015.	1/15/15
Bank of America, "Taxes raised on gas-diesel, no cut on refinery prices for now," January 19, 2015.	1/19/15
Bank of America, "Now you see it, now you don't - Write-off not included in 3Q," January 28, 2015.	1/28/15
Bank of America, "Estimate Change - No easy fix; this will take time," January 29, 2015.	1/29/15
Bank of America, "Moody's lowers PETBRA rating to Baa3; review for downgrade," January 30, 2015.	1/30/15
Bank of America, "Possible management change getting more attention," February 3, 2015.	2/3/15
Bank of America, "Help Wanted - New CEO sought to navigate troubled waters," February 4, 2015.	2/4/15

Analyst Reports	Date
Bank of America, "How likely is a dividend for either ON or PN shares," February 4, 2015.	2/4/15
Bank of America, "Trying to turn the page - New management team announced," February 6, 2015.	2/6/15
Bank of America, "Is there any hope at all? Three	2/25/15
Bank of America, "'Lava Jato' aka Car Wash - Brazilian risk insight - Pan-Euro," February 27, 2015.	2/27/15
Bank of America, "Navigating the Car Wash for BG & Galp - Pan-Euro," February 27, 2015.	2/27/15
Bank of America, "Announced asset sale plan - Step in right direction," March 2, 2015.	3/2/15
Bank of America, "Brazil conf notes - Petrobras uncertainty remains high," March 9, 2015.	3/9/15
Bank of America, "Brazil Conference Feedback," March 9, 2015.	3/9/15
Bank of America, "Crude output +12% YoY; falls for 2nd consecutive month - NEUTRAL," March 20, 2015.	3/20/15
Bank of America, "Oils - The pain of it all - Adj. POs and ests. on weaker Real forecast - Americas," March 26, 2015.	3/26/15
Bank of America, "M&A could re-focus on LT value in weak environment - NEUTRAL," April 8, 2015.	4/8/15
Bank of America, "Braskem SA-A - Petrobras divestment - easier said than done," April 13, 2015.	4/13/15
Bank of America, "What a LT oil px of US\$80 bbl means for Latam oils," April 13, 2015.	4/13/15
Bank of America, "Rating Change - Moving to Buy-raising PO on exp. approval of 2014 fin stmt - BUY," April 14, 2015.	4/14/15
Bank of America, "Crude output up 11.8% YTD,	4/20/15
Bank of America, "Signs of sunlight - Positive indications in 4Q14 release," April 23, 2015.	4/23/15
Bank of America, "Petrobras ON - 4Q14 conference call focuses on deleveraging," April 24, 2015.	4/24/15
Bank of America, "Near term challenges rising for Argentine Oil and Gas sector," April 28, 2015.	4/28/15
Bank of America, "1Q15 Pre - Not pretty overall, given price drop," April 30, 2015.	4/30/15
Bank of America, "Building credibility for the long haul," May 4, 2015.	5/4/15
Bank of America, "The magic in the fix is in finding the right mix," May 15, 2015.	5/15/15
Bank of America, "1Q15 - Winds of change - Positive trends help earnings - BUY - Brazil," May 17, 2015.	5/17/15
Bank of America, "Crude oil output +1.2% vs. March; +10.4% YoY," May 20, 2015.	5/20/15
Bank of America, "Inside the barrel - Part II - Updating the ToR valuation," May 21, 2015.	5/21/15
Bank of America, "Dom. Crude output +6.9% YoY, but -1.1% due to maintenance," June 12, 2015.	6/12/15
Bank of America, "Pricing conundrum - Net of gasoline-diesel is above intl px," June 21, 2015.	6/21/15
Bank of America, "Waiting with anticipation for Strategic Plan," June 23, 2015.	6/23/15
Bank of America, "Leaner & Meaner Positive business plan announcement," June 29, 2015.	6/29/15
Bank of America, "Press conference provides more details on Strategic. Plan," June 29, 2015.	6/29/15
Bank of America, "Divestment process gaining steam with possible move to sell stake in BR," July 2, 2015.	7/2/15
Bank of America, "Negative preliminary ruling on tax applications in several concessions," July 7, 2015.	7/7/15
Bank of America, "2Q15 - Overall weak, but some pick-up vs. 1Q15; Braskem should show best trends," July 16,	7/16/15
Bank of America, "Near-term oil price risk could pressure Latam oil stocks near-term," July 26, 2015.	7/26/15
Barclays Capital, "Petroleo Brasileiro S.A. (PBR - US\$ 24.45) 2-Equal weight," January 28, 2009.	1/28/09
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," January 6, 2010.	1/6/10
Barclays Capital, "2009 and 2010 EPS Changes," January 7, 2010.	1/7/10
Barclays Capital, "Petroleo Brasileiro S.A. (PBRA - US\$ 40.51) 1-Overweight," January 15, 2010.	1/15/10
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," January 20, 2010.	1/20/10
Barclays Capital, "Petrobras Report Dec and 2009 Production," January 21, 2010.	1/21/10
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," February 4, 2010.	2/4/10
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," February 17, 2010.	2/17/10
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," March 22, 2010.	3/22/10
Barclays Capital, "Reiterate 1-OW Rating," March 24, 2010.	3/24/10
Barclays Capital, "Reiterate 2-EW Rating," March 25, 2010.	3/25/10
Barclays Capital, "Restating 4Q09 EPS to US GAAP," March 26, 2010.	3/26/10
Barclays Capital, "Meeting with Petrobras' CFO," March 31, 2010.	3/31/10
Barclays Capital, "2010 and 2011 EPS Changes," April 7, 2010.	4/7/10
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," April 14, 2010.	4/14/10
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," May 14, 2010.	5/14/10
Barclays Capital, "Target Share Offering by July," May 18, 2010.	5/18/10
Barclays Capital, "Target Share Offering by July," May 19, 2010.	5/19/10
Barclays Capital, "Feedback From Petrobras' CEO Meeting," May 21, 2010.	5/21/10
Barclays Capital, "Passage of New Oil Laws," June 10, 2010.	6/10/10
Barclays Capital, "Refining - A Tough Sell," June 24, 2010.	6/24/10
Barclays Capital, "No New News on Shares Offering," August 18, 2010.	8/18/10
Barclays Capital, "Petrobras Restates 2Q10 EPS to US GAAP," August 25, 2010.	8/25/10
Barclays Capital, "Stock Will Likely Remain Under Pressure," September 2, 2010.	9/2/10
Barclays Capital, "Conference Call Update," September 3, 2010.	9/3/10
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," September 10, 2010.	9/10/10
Barclays Capital, "EM CORPORATE CREDIT DAILY," September 23, 2010.	9/23/10
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," September 24, 2010.	9/24/10

Analyst Reports	Date
Barclays Capital, "Downgrade to 2-EW," October 6, 2010.	10/6/10
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," October 11, 2010.	10/11/10
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," November 1, 2010.	11/1/10
Barclays Capital, "Shares Likely to Continue Underperforming," November 17, 2010.	11/17/10
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," November 22, 2010.	11/22/10
Barclays Capital, "Petrobras Restates 3Q10 EPS to US GAAP," November 24, 2010.	11/24/10
Barclays Capital, "Bidding Results for Pre-Salt Drilling Rigs," November 29, 2010.	11/29/10
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," December 7, 2010.	12/7/10
Barclays Capital, "Lower 2011 Brazil Oil Production Outlook," December 15, 2010.	12/15/10
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," January 10, 2011.	1/10/11
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," January 25, 2011.	1/25/11
Barclays Capital, "Time to Revisit, Upgrade to 1-OW," February 10, 2011.	2/10/11
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," February 11, 2011.	2/11/11
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," March 4, 2011.	3/4/11
Barclays Capital, "Petrobras Restates 4Q10 EPS to US GAAP," March 18, 2011.	3/18/11
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," March 23, 2011.	3/23/11
Barclays Capital, "Bi-Weekly Brazilian Drilling Tracker," April 20, 2011.	4/20/11
Barclays Capital, "2011-15 Capex Plan Announced - Positive," July 24, 2011.	7/24/11
Barclays Capital, "2011 Reserve Replacement of 114%," January 12, 2012.	1/12/12
Barclays Capital, "Better 1Q12, But Still See No Catalyst," May 18, 2012.	5/18/12
Barclays Capital, "Petrobras already priced for supply," January 31, 2013.	1/31/13
Barclays Capital, "Dividend Cut, Capex Increase, Debt Threshold Reached... Attractive Asset Value But Could Be	2/8/13
Barclays Capital, "Positive Step on Diesel Price Increase," March 7, 2013.	3/7/13
Barclays Capital, "2013-2017 Business Plan Announced," March 18, 2013.	3/18/13
Barclays Capital, "Improving, but still in a Tough Spot," April 30, 2013.	4/30/13
Barclays Capital, "Model Adjustments to Reflect New Hedge Accounting," July 11, 2013.	7/11/13
Barclays Capital, "Lowering Estimates: Expect \$0.53 vs. Consensus \$0.44," August 6, 2013.	8/6/13
Barclays Capital, "First Glance of Petrobras 2Q13 Results," August 11, 2013.	8/11/13
Barclays Capital, "2H Could Face Significant Cash Burn," August 13, 2013.	8/13/13
Barclays Capital, "2Q13: Better than expected, but bonds set to be driven by sovereign performance," September 11,	9/11/13
Barclays Capital, "PBR/PBR.A, EW: Positive, \$14.87/\$15.75," September 13, 2013.	9/13/13
Barclays Capital, "Energy/Power Conference Takeaways," September 18, 2013.	9/18/13
Barclays Capital, "3T13 - First Glance of Petrobras," October 28, 2013.	10/28/13
Barclays Capital, "Still Early Days on Pricing Mechanism," October 29, 2013.	10/29/13
Barclays Capital, "Product Price Increase, But No Details on New Pricing Mechanism," December 2, 2013.	12/2/13
Barclays Capital, "Weak Production Update & 4Q13 Preview: Expect \$0.34 vs Consensus \$0.37," February 3, 2014.	2/3/14
Barclays Capital, "2014-2018 Strategic Plan Released – Can It Meet The Challenges?," February 27, 2014.	2/27/14
Barclays Capital, "Weak January 2014 Production," March 6, 2014.	3/6/14
Barclays Capital, "Neutral Production Update & 2Q14 Preview: Expect \$0.54 vs Consensus \$0.45," July 22, 2014.	7/22/14
Barclays Capital, "Major Oils Asset Value, 2014 Edition," July 25, 2014.	7/25/14
Barclays Capital, "First Glance of Petrobras 2Q14 Results," August 10, 2014.	8/10/14
Barclays Capital, "Decent Operational Quarter, Expect Near-Term Momentum," August 12, 2014.	8/12/14
Barclays Capital, "Conference Feedback - Petrobras," September 2, 2014.	9/2/14
Barclays Capital, "Dinner With Petrobras Management," September 2, 2014.	9/2/14
Barclays Capital, "Petrobras PBR-PBRA - Management Meeting Takeaways," October 20, 2014.	10/20/14
Barclays Capital, "Energy Downgrading the Majors due to Unattractive Valuation," January 14, 2015.	1/14/15
Barclays Capital, "2014 Reserve Replacement of 101%," January 16, 2015.	1/16/15
Barclays Capital, "3Q14 Review," January 29, 2015.	1/29/15
Barclays Capital, "First Look at Petrobras CEO and Executive Board Resignations," February 4, 2015.	2/4/15
Barclays Capital, "Petrobras announced larger than expected assets sales program," March 2, 2015.	3/2/15
Barclays Capital, "First Glance of Petrobras (PBR) 4Q14 Results," April 23, 2015.	4/23/15
Barclays Capital, "Important Turning Point," April 24, 2015.	4/24/15
Barclays Capital, "Continuing to Turn the Corner," May 19, 2015.	5/19/15
Barclays Capital, "Majors and Refiners Expected to Be In Line or Better Than Consensus," July 7, 2015.	7/7/15
Barclays Capital, "Fine-Tuning Price Target," July 9, 2015.	7/9/15
BMO Capital Markets, "Q2/14 Results Review – Weak, Although Miss Driven by Corporate Charges," August 11,	8/11/14
BMO Capital Markets, "Q3/14 results – Full Financial Impact of Corruption Investigations yet to Come," January 28,	1/28/15
BMO Capital Markets, "Brazil Scandal Impacts Offshore Development Schedules; Production Growth Downgraded,"	3/18/15
Bradesco, "Weak Operating Results; Boost from African Sale," August 11, 2013.	8/11/13
Bradesco, "December Output Figures 2.5% Decline in 2013," January 31, 2014.	1/31/14
Bradesco, "Margin Expansion on PMR Increase and Brent - FX Decrease," February 18, 2014.	2/18/14

Analyst Reports	Date
Bradesco, "Weak Results," February 26, 2014.	2/26/14
Bradesco, "Weak Results With Misleading Margin," May 11, 2014.	5/11/14
BTG Pactual, "3Q10 Review: Just about every variable...", November 12, 2010.	11/12/10
BTG Pactual, "2Q11 Review: All things considered...", August 15, 2011.	8/15/11
BTG Pactual, "Petrobras in drought," January 9, 2013.	1/9/13
BTG Pactual, "2Q13 Review: Somewhere between 1986 and 1987...", August 9, 2013.	8/9/13
BTG Pactual, "Shifting sands," January 30, 2014.	1/30/14
BTG Pactual, "Morning Pack - QGEP, PRE, PBR," February 6, 2014.	2/6/14
BTG Pactual, "Morning Pack - PBR, EC, ALPEK, BAK, CNE," February 11, 2014.	2/11/14
BTG Pactual, "Morning Pack - PBR, PRE, YPF, BAK, EC," February 12, 2014.	2/12/14
BTG Pactual, "Morning Pack - PBR, QGEP, BAK, UGP, CNE, YPF," February 19, 2014.	2/19/14
BTG Pactual, "Morning Pack - PBR, UGP, YPF, PRE, QGEP," February 24, 2014.	2/24/14
BTG Pactual, "4Q13 Review: The end of 2013. And aiming for 2030," February 26, 2014.	2/26/14
BTG Pactual, "Morning Pack - PBR, EC, QGEP, PRE, CNE," February 28, 2014.	2/28/14
BTG Pactual, "Morning Pack - CNE, YPF, PBR," March 6, 2014.	3/6/14
BTG Pactual, "Morning Pack - PBR, HRT," March 25, 2014.	3/25/14
BTG Pactual, "Morning Pack - QGEP, PBR, YPF, EC," March 26, 2014.	3/26/14
BTG Pactual, "Morning Pack - EC, BAK, PBR, YFP, GRPK," March 28, 2014.	3/28/14
BTG Pactual, "Morning pack - PBR, HRT, BAK," March 31, 2014.	3/31/14
BTG Pactual, "1Q14 Review: Record breaker?," May 11, 2014.	5/11/14
BTG Pactual, "2Q14 Review: The "unexplainable" line," August 9, 2014.	8/9/14
Caixa BI, "4Q13 results preview - Preview," February 4, 2014.	2/4/14
Caixa BI, "4Q13 results comment - Post Results," February 26, 2014.	2/26/14
Caixa BI, "Too much uncertainty...", November 20, 2014.	11/20/14
Citi Bank, "Details on 2010," June 21, 2010.	6/21/10
Citi Bank, "Re-fueling Pit Stop Ahead," August 27, 2012.	8/27/12
Citi Bank, "Disappointing results due to higher costs," October 28, 2012.	10/28/12
Citi Bank, "Alert 3Q12 Conference call highlights," October 29, 2012.	10/29/12
Citi Bank, "Global Leaders in Meeting the World's Affordable Energy Needs," November 13, 2012.	11/13/12
Citi Bank, "Fuel Price adjustment sliding to 2013," November 21, 2012.	11/21/12
Citi Bank, "FX Volatility – Impact on Coverage Space," December 4, 2012.	12/4/12
Citi Bank, "New indications of fuel price increase in Q1," December 4, 2012.	12/4/12
Citi Bank, "New capacity on track for strong 2014 – notes from yard visit," December 11, 2012.	12/11/12
Citi Bank, "Negative comments from Finance Minister on gas prices," December 12, 2012.	12/12/12
Citi Bank, "Fuel price hike and detailed cost cut program in 2013," December 19, 2012.	12/19/12
Citi Bank, "Alert Fears of headline risk for Petrobras and OGX," December 21, 2012.	12/21/12
Citi Bank, "Shale oil-gas find in Colombia," January 24, 2013.	1/24/13
Citi Bank, "Disappointing fuel price increase adds R\$6.5bn to 2013 EBITDA," January 29, 2013.	1/29/13
Citi Bank, "Results disappoint, but PN dividends stronger than expected," February 5, 2013.	2/5/13
Citi Bank, "Diesel price hike announced. Attractive valuation over balance sheet concerns," March 6, 2013.	3/6/13
Citi Bank, "Notes From Latin American Conference," March 14, 2013.	3/14/13
Citi Bank, "Capex cuts and improving cash flow profile," March 18, 2013.	3/18/13
Citi Bank, "Alert Production growth outlook improving," March 19, 2013.	3/19/13
Citi Bank, "Pre-salt remains the key priority for Petrobras," March 19, 2013.	3/19/13
Citi Bank, "Global Oil Demand Growth – The End Is Nigh," March 26, 2013.	3/26/13
Citi Bank, "Investing for Commodity Uncertainty," May 31, 2013.	5/31/13
Citi Bank, "Quick post: PBR.BR: President Dilma picks president of Brazil's pre-salt overseer - PPSA," October 11,	10/11/13
Citi Bank, "Libra bid will test Big Oil's appetite for Brazil's pre-salt contracts," October 17, 2013.	10/17/13
Citi Bank, "Libra bid shows higher interest of Big Oil in Brazil's pre-salt," October 21, 2013.	10/21/13
Citi Bank, "Large earnings miss, but price formula would be a major catalyst," October 27, 2013.	10/27/13
Citi Bank, "3Q13: Did You Notice," November 21, 2013.	11/21/13
Citi Bank, "Fuel price increase disappoints, black-box policy maintained downgrade to neutral, unchanged US\$ 17.50	12/2/13
Citi Bank, "Alert: 2014 budget roadmap – Positive capex hint, but negative price review of production rights,"	12/11/13
Citi Bank, "CEO meeting increases confidence in fuel price hikes, but short-terms risks remain in place. Maintain	12/16/13
Citi Bank, "Positive Q4 expected, but short term events impact performance," January 21, 2014.	1/21/14
Citi Bank, "Cash Burn Accelerate," February 26, 2014.	2/26/14
Citi Bank, "Citi's 2014 LatAm Conference Preview & "Cheat Sheet", March 6, 2014.	3/6/14
Citi Bank, "Ibovespa back to 45k, but drivers of technical rebound less clear this time," March 12, 2014.	3/12/14
Citi Bank, "Meeting improves ST outlook, but leverage concerns persist," March 24, 2014.	3/24/14
Citi Bank, "Oil Insights - Notes from Brazil Investor Trip - Pre-salt at the spotlight - Notes from Rio meeting," April 1,	4/1/14
Citi Bank, "Oils - Pre-Salt Brazil Delivering On Promise - Brazil Field Trip highlights Modularisation, Drilling Deflation	4/2/14

Analyst Reports	Date
Citi Bank, "Q1 results in line with expectations, but stock performance remains driven by Brazil's macro agenda," May	5/12/14
Citi Bank, "Head-to-Head: Petrobras, Rosneft, PetroChina," May 22, 2014.	5/22/14
Citi Bank, "Brazil conference Highlights - Oil regulatory agenda improvin," June 5, 2014.	6/5/14
Citi Bank, "Revisit LatAm Upstream - Downgrade PRE to Neutral, Reiterate Sell on EC, Neutral on PBR; GTE and	6/17/14
Citi Bank, "Unexpected PSC award adds weight to PBR balance sheet," June 24, 2014.	6/24/14
Citi Bank, "Management meeting has mixed takeaways," June 30, 2014.	6/30/14
Citi Bank, "Q2 Achieves Expected QoQ Improvement," August 10, 2014.	8/10/14
Citi Bank, "Alert - Marina Silva's platform offers material change to stock," September 1, 2014.	9/1/14
Citi Bank, "Marina Silva's energy platform unfolding," September 12, 2014.	9/12/14
Citi Bank, "Two factors from August strong production driving upside risk to 2H14 performance," September 15, 2014.	9/15/14
Citi Bank, "Petrobras - Look beyond elections, oil price sensitivity is high," October 13, 2014.	10/13/14
Citi Bank, "Petrobras - Debt downgrade combined with weaker oil and FX raises balance sheet risks back to main	10/22/14
Citi Bank, "Petrobras - Buy the PN-ON spread," October 24, 2014.	10/24/14
Citi Bank, "3Q results uncertainty can impact the stock. Go for the PN-ON spread," November 3, 2014.	11/3/14
Citi Bank, "Petrobras finally reaches fuel price parity," November 6, 2014.	11/6/14
Citi Bank, "Upgrading PBR to Buy - Deep Dive into Stock Fundamentals," November 24, 2014.	11/24/14
Citi Bank, "Positive news should support stock over next few months," December 10, 2014.	12/10/14
Citi Bank, "Petrobras may raise R\$7bn in new debt with Treasury Guarantee," December 11, 2014.	12/11/14
Citi Bank, "Management calls for free cash flow in 2015," December 15, 2014.	12/15/14
Citi Bank, "Takeaways from PBR management and key suppliers meetings," January 12, 2015.	1/12/15
Citi Bank, "Hello Compliance - a new prime minister," January 13, 2015.	1/13/15
Citi Bank, "Stronger production adds upside risk to 2015," January 13, 2015.	1/13/15
Citi Bank, "The 2015 capex revision on its way," January 16, 2015.	1/16/15
Citi Bank, "Initial read of PBR 3Q results is positive," January 28, 2015.	1/28/15
Citi Bank, "Petrobras - Where to focus on management call Three main questions," January 28, 2015.	1/28/15
Citi Bank, "Petrobras - 3Q14 Conference Call Highlights," January 29, 2015.	1/29/15
Citi Bank, "Management increases uncertainty to PN-ON spread trade," January 30, 2015.	1/30/15
Citi Bank, "Potential Management Changes Should Help Turnaround," February 4, 2015.	2/4/15
Citi Bank, "Miss corporate governance upgrade - Downgrade to Neutral," February 8, 2015.	2/8/15
Citi Bank, "PBR downgraded below investment grade," February 25, 2015.	2/25/15
Citi Bank, "Expanding asset sales target," March 2, 2015.	3/2/15
Citi Bank, "Potential Impacts on PBR and QGEP Readings from GALP's Capital Markets Presentation," March 11,	3/11/15
Citi Bank, "Relief Rally Should Continue, Expect More From 4Q Results," April 9, 2015.	4/9/15
Citi Bank, "4Q14 results confirm positive developments," April 23, 2015.	4/23/15
Citi Bank, "Brazil pre-salt continues to improve," May 12, 2015.	5/12/15
Citi Bank, "Beware gasoline prices could increase in the short-term," May 14, 2015.	5/14/15
Citi Bank, "1Q15 solid beat, increase TP to \$10.5-ADR," May 18, 2015.	5/18/15
Citi Bank, "Fully funded for 2015, new Chinese \$7bn loan," May 19, 2015.	5/19/15
Citi Bank, "Cut to Interest on Capital tax benefit would impact PBR," May 21, 2015.	5/21/15
Citi Bank, "International capital markets re-open for PBR," June 2, 2015.	6/2/15
Citi Bank, "PBR changes on tax could impact cash flow," June 23, 2015.	6/23/15
Citi Bank, "Petrobras (PBR) - Asset value or earnings growth story," June 30, 2015.	6/30/15
Citi Bank, "Risks weigh in the short-term, Q2 preview," July 22, 2015.	7/22/15
Cowen and Company, "Petrobras in a Tight Corner," November 17, 2014.	11/17/14
Cowen and Company, "Uncertainty Continues as 3Q14 Earnings Delayed, Again," December 15, 2014.	12/15/14
Cowen and Company, "3Q14 un-audited results published but key questions still unanswered," January 28, 2015.	1/28/15
Cowen and Company, "Petrobras/Brazil Offshore: Any Light at the End of the Tunnel?," March 12, 2015.	3/12/15
Cowen and Company, "New Management Changing Course & Resetting Expectations," April 24, 2015.	4/24/15
Credit Suisse, "Stronger asset base, diluted investment case," October 12, 2010.	10/12/10
Credit Suisse, "Poor quality in-line Q2, but is it too cheap?," August 16, 2011.	8/16/11
Credit Suisse, "Better valuation, same risks, no catalysts," August 17, 2011.	8/17/11
Credit Suisse, "Emerging Markets Daily," August 18, 2011.	8/18/11
Credit Suisse, "2Q13: Giving hope," August 11, 2013.	8/11/13
Credit Suisse, "The value trap dilemma," January 29, 2014.	1/29/14
Credit Suisse, "Learnings from LAIC," February 7, 2014.	2/7/14
Credit Suisse, "Floating the buoys," February 20, 2014.	2/20/14
Credit Suisse, "Q4 and business plan," February 25, 2014.	2/25/14
Credit Suisse, "The Petrobras Handbook: An investor's guide to a unique oil company," March 2014.	March 2014
Credit Suisse, "Meeting management," March 24, 2014.	3/24/14
Credit Suisse, "Look at the spread (before April 2nd)," March 26, 2014.	3/26/14
Credit Suisse, "1Q14: Sailing along," May 11, 2014.	5/11/14

Analyst Reports	Date
Credit Suisse, "The PN-ON spread," July 16, 2014.	7/16/14
Credit Suisse, "A good promise, but a hard one to keep," December 14, 2014.	12/14/14
Deutsche Bank, "Petrobras: Reserves: negative oil price impact of 08 reversed in 2009," January 15, 2010.	1/15/10
Deutsche Bank, "PETROLEO BRASILEIRO S.A. - PETROBRAS," January 19, 2010.	1/19/10
Deutsche Bank, "E&P news round up: Cascade, Guara and Papa Terra," January 28, 2010.	1/28/10
Deutsche Bank, "Four reasons to remain cautious on PBR," January 28, 2010.	1/28/10
Deutsche Bank, "Capitalization bill could be voted today," February 10, 2010.	2/10/10
Deutsche Bank, "Capitalization newsflow still impacting the stock," February 19, 2010.	2/19/10
Deutsche Bank, "January production and Congress voting update," February 25, 2010.	2/25/10
Deutsche Bank, "4Q09 operating results below expectations," March 22, 2010.	3/22/10
Deutsche Bank, "PBR announces new (and increased) 2010 capex," March 22, 2010.	3/22/10
Deutsche Bank, "February production and new extended well test in Santos," March 22, 2010.	3/22/10
Deutsche Bank, "Highlights from conference call with CEO," March 24, 2010.	3/24/10
Deutsche Bank, "2010 capex funding risk pressures stock," March 28, 2010.	3/28/10
Deutsche Bank, "1Q10 domestic oil production lackluster but in line," April 22, 2010.	4/22/10
Deutsche Bank, "Capitalization: new legislation is an unlikely alternative," April 27, 2010.	4/27/10
Deutsche Bank, "Guide to capitalization and regulatory voting process," April 28, 2010.	4/28/10
Deutsche Bank, "Capitalization: if there is a will, there is a way," May 2, 2010.	5/2/10
Deutsche Bank, "1Q10 preview: strong quarter, led by upstream," May 13, 2010.	5/13/10
Deutsche Bank, "1Q: adjusted EBITDA ahead of ests, lower taxes boosts NI," May 16, 2010.	5/16/10
Deutsche Bank, "Notes from trip to Brasilia," May 21, 2010.	5/21/10
Deutsche Bank, "Thoughts on capitalization following meeting with CEO," May 21, 2010.	5/21/10
Deutsche Bank, "Capitalization: shareholders meeting scheduled for June 22," May 23, 2010.	5/23/10
Deutsche Bank, "April production; small discoveries announced," May 26, 2010.	5/26/10
Deutsche Bank, "Voting postponed one more time, but expected for today," June 8, 2010.	6/8/10
Deutsche Bank, "Capitalization and PSA Bills approved by the Senate," June 10, 2010.	6/10/10
Deutsche Bank, "Final version of the 2010:14 investment plan announced," June 21, 2010.	6/21/10
Deutsche Bank, "Capitalization: more bumps on the road," June 22, 2010.	6/22/10
Deutsche Bank, "Conglomerates Alert: Petrobras boosts 2010-14 capex plans by 28% to US\$224b," June 22, 2010.	6/22/10
Deutsche Bank, "Capitalization approved but postponed," June 23, 2010.	6/23/10
Deutsche Bank, "Lowering PT on short-term concerns and higher capex," June 30, 2010.	6/30/10
Deutsche Bank, "June production pressured by maintenance stoppage," July 19, 2010.	7/19/10
Deutsche Bank, "Congress in recess, new regulation left pending," July 19, 2010.	7/19/10
Deutsche Bank, "Lists bonds to be used by minorities in capitalization," July 28, 2010.	7/28/10
Deutsche Bank, "5bn BOE valuation: conflicting news flow pressures shares," August 10, 2010.	8/10/10
Deutsche Bank, "2Q: operating results in line, bottom line higher," August 16, 2010.	8/16/10
Deutsche Bank, "Capitalization: ANP's appraisal report result is out ?," August 19, 2010.	8/19/10
Deutsche Bank, "Domestic oil production rises 1.4% MoM in July," August 20, 2010.	8/20/10
Deutsche Bank, "Domestic oil production rises 1%MoM in August," October 4, 2010.	10/4/10
Deutsche Bank, "Life after the R\$120bn capital increase," October 4, 2010.	10/4/10
Deutsche Bank, "New frontier in Sergipe-Alagoas; Tupi pilot start up," October 27, 2010.	10/27/10
Deutsche Bank, "The ANP 'announces' Libra volumes," October 31, 2010.	10/31/10
Deutsche Bank, "Stoppages pressure domestic oil production in September," November 2, 2010.	11/2/10
Deutsche Bank, "3Q10 earnings preview: mixed results," November 10, 2010.	11/10/10
Deutsche Bank, "Non recurring items cloud a solid 3Q10," November 11, 2010.	11/11/10
Deutsche Bank, "3Q earnings conference call highlights," November 16, 2010.	11/16/10
Deutsche Bank, "Meeting with Petrobras' head of refining in Rio," November 19, 2010.	11/19/10
Deutsche Bank, "Stoppages end and production picks up in November," December 28, 2010.	12/28/10
Deutsche Bank, "Tupi: Iracema officially commercial; management to stay," December 29, 2010.	12/29/10
Deutsche Bank, "Average 2010 domestic oil production in line," December 30, 2010.	12/30/10
Deutsche Bank, "Two additional FPSOs announced for the pre-salt Santos," January 7, 2011.	1/7/11
Deutsche Bank, "Positive trends on 2010 reserves already priced in," January 16, 2011.	1/16/11
Deutsche Bank, "4Q production: slightly higher on strong natural gas output," January 24, 2011.	1/24/11
Deutsche Bank, "4Q results pressured by refining and G&E," February 16, 2011.	2/16/11
Deutsche Bank, "Maintenance shutdowns lead to lower production in January," February 22, 2011.	2/22/11
Deutsche Bank, "4Q: concerning trends, new '11 capex and production," February 27, 2011.	2/27/11
Deutsche Bank, "Looking beyond oil prices," March 6, 2011.	3/6/11
Deutsche Bank, "Production remains pressured by maintenance stoppages," March 22, 2011.	3/22/11
Deutsche Bank, "Production up in March, but below estimate for 1Q11," April 26, 2011.	4/26/11
Deutsche Bank, "Round 11 of concession sales is scheduled for September," April 28, 2011.	4/28/11
Deutsche Bank, "Positive exploration and development newsflow," April 29, 2011.	4/29/11

Analyst Reports	Date
Deutsche Bank, "Revised pre-salt Santos development plan released," May 1, 2011.	5/1/11
Deutsche Bank, "1Q11 preview: high oil prices mitigated by pricing policy," May 12, 2011.	5/12/11
Deutsche Bank, "Remarks made by MME should have limited impact," May 12, 2011.	5/12/11
Deutsche Bank, "1Q11 operating results slightly below NI," May 15, 2011.	5/15/11
Deutsche Bank, "1Q11 conference call highlights," May 17, 2011.	5/17/11
Deutsche Bank, "Market focus shifts from pricing to 5-yr capex," May 18, 2011.	5/18/11
Deutsche Bank, "Is there a tradeoff between capex and pricing?," May 19, 2011.	5/19/11
Deutsche Bank, "Maintenance stoppages continue to limit production growth," May 23, 2011.	5/23/11
Deutsche Bank, "May production flat MoM, expecting a ramp up in 2H," June 16, 2011.	6/16/11
Deutsche Bank, "Significant opportunities in the Latam oil and gas industry," July 4, 2011.	7/4/11
Deutsche Bank, "Production recovers in June, 2Q still a bit lower vs. DBE," July 17, 2011.	7/17/11
Deutsche Bank, "Business plan: improvements but key questions remain," July 25, 2011.	7/25/11
Deutsche Bank, "Business plan: questions for management," July 25, 2011.	7/25/11
Deutsche Bank, "Business plan: answers from management," July 26, 2011.	7/26/11
Deutsche Bank, "Final thoughts on the new strategic plan - Amended," August 3, 2011.	8/3/11
Deutsche Bank, "2Q11: weak operating results," August 10, 2011.	8/10/11
Deutsche Bank, "2Q preview: E&P gain; refining pain," August 14, 2011.	8/14/11
Deutsche Bank, "2Q review: higher costs pressure a solid quarter," August 16, 2011.	8/16/11
Deutsche Bank, "Production remained weak in July," August 24, 2011.	8/24/11
Deutsche Bank, "YPF regulatory investigation and another strike," August 29, 2011.	8/29/11
Deutsche Bank, "Main issues at DB GEMs, oil tax update, lower PT," September 15, 2011.	9/15/11
Deutsche Bank, "August production continued to disappoint," September 22, 2011.	9/22/11
Deutsche Bank, "Tax decrease neutral for Petrobras," September 27, 2011.	9/27/11
Deutsche Bank, "Production picks up in September, but 3Q figures misses DBE," October 24, 2011.	10/24/11
Deutsche Bank, "Unexpected increase in gasoline and diesel prices," October 30, 2011.	10/30/11
Deutsche Bank, "Second well in Franco confirms reservoir extension," November 9, 2011.	11/9/11
Deutsche Bank, "3Q better than expected; a bit clouded by one offs," November 13, 2011.	11/13/11
Deutsche Bank, "Carioca: new discovery; extension of exploratory period," November 13, 2011.	11/13/11
Deutsche Bank, "October domestic oil production flat MoM," November 27, 2011.	11/27/11
Deutsche Bank, "Domestic oil production picks up in November," December 21, 2011.	12/21/11
Deutsche Bank, "2011 reserve figures announced - no surprises," January 11, 2012.	1/11/12
Deutsche Bank, "Positive news from Solimoes ... for Petrobras," February 5, 2012.	2/5/12
Deutsche Bank, "4Q11 preview: E&P gains and refining pains," February 8, 2012.	2/8/12
Deutsche Bank, "New CEO is confirmed. What next?," February 9, 2012.	2/9/12
Deutsche Bank, "4Q11 results well below expectations," February 10, 2012.	2/10/12
Deutsche Bank, "January production up 1%MoM, more exploration news," February 24, 2012.	2/24/12
Deutsche Bank, "Capex on the chopping block?," March 14, 2012.	3/14/12
Deutsche Bank, "Domestic oil production remains unexciting," March 29, 2012.	3/29/12
Deutsche Bank, "Petrobras Biofuels: Conference call invitation," April 19, 2012.	4/19/12
Deutsche Bank, "Making the case for gasoline/diesel price increase," April 23, 2012.	4/23/12
Deutsche Bank, "Interruption in the Frade field and maintenance take a toll," May 4, 2012.	5/4/12
Deutsche Bank, "1Q12 - the surprise (this time) was on the upside," May 16, 2012.	5/16/12
Deutsche Bank, "Strategic plan: first look," June 14, 2012.	6/14/12
Deutsche Bank, "5-year business plan: growth pushed to 2014," June 14, 2012.	6/14/12
Deutsche Bank, "Business plan on the road: notes from Rio meeting," June 25, 2012.	6/25/12
Deutsche Bank, "Where to from here? (Or what can't go wrong anymore?)," July 1, 2012.	7/1/12
Deutsche Bank, "2012 domestic oil production hits its lowest level in August," September 30, 2012.	9/30/12
Deutsche Bank, "3Q Lower elimination masks poor earnings quality," October 25, 2012.	10/25/12
Deutsche Bank, "3Q results QoQ improvement but still below DBE and consensus," October 27, 2012.	10/27/12
Deutsche Bank, "3Q12 conference call highlights," October 30, 2012.	10/30/12
Deutsche Bank, "Domestic oil production hits record low levels in September," October 30, 2012.	10/30/12
Deutsche Bank, "No surprises in Oct production, lack of price increase is weighting on stock," November 26, 2012.	11/26/12
Deutsche Bank, "Oil & Gas Alert Amendment to HRT: Petrobras MoU is neutral for both stocks," December 18, 2012.	12/18/12
Deutsche Bank, "Earnings and PT sensitivity to potential price increases," December 19, 2012.	12/19/12
Deutsche Bank, "PROCOP fighting rising costs," December 20, 2012.	12/20/12
Deutsche Bank, "Unwanted holiday season gift: potential new oil tax," December 21, 2012.	12/21/12
Deutsche Bank, "Flat reserves YoY not a concern," January 11, 2013.	1/11/13
Deutsche Bank, "News of gasoline: diesel price increase resurfaces," January 15, 2013.	1/15/13
Deutsche Bank, "PRON-GAS New plan to alleviate gas supply concerns," January 15, 2013.	1/15/13
Deutsche Bank, "Price increase is a positive but it doesn't eliminate losses + 4Q preview," January 30, 2013.	1/30/13
Deutsche Bank, "Mixed bag weaker 4Q results but positive sale of non core asset," January 31, 2013.	1/31/13

Analyst Reports	Date
Deutsche Bank, "4Q12 not as bad as figures suggest, but cash flow concerns increase," February 5, 2013.	2/5/13
Deutsche Bank, "A more challenging outlook; lowering EPS and PT," February 6, 2013.	2/6/13
Deutsche Bank, "Petrobras - Where to from here? Reviewing Petrobras' 3 'P's," February 25, 2013.	2/25/13
Deutsche Bank, "Higher ethanol content in gasoline C mix is a small positive," March 1, 2013.	3/1/13
Deutsche Bank, "January domestic oil production declines sharply due to one off events," March 1, 2013.	3/1/13
Deutsche Bank, "Diesel price increase another 3P surprise (positive this time)," March 6, 2013.	3/6/13
Deutsche Bank, "Brazil's oil and gas industry/legislative uncertainty is increasing," March 11, 2013.	3/11/13
Deutsche Bank, "Flat capex and production targets but higher funding risk," March 17, 2013.	3/17/13
Deutsche Bank, "2013-17 Plan on the Road: highlights from Rio," March 19, 2013.	3/19/13
Deutsche Bank, "2013-17 Plan on the Road: questions for management," March 19, 2013.	3/19/13
Deutsche Bank, "2013-17 Plan on the Road: highlights from NYC," March 21, 2013.	3/21/13
Deutsche Bank, "Domestic oil production falls 2.3% MoM and 8.5% YoY in February," March 31, 2013.	3/31/13
Deutsche Bank, "Diversos - View is still cautious but we see opportunities," June 10, 2013.	6/10/13
Deutsche Bank, "May production figures remain lackluster," July 3, 2013.	7/3/13
Deutsche Bank, "Solid, but in line; lack of pricing = challenging outlook," August 12, 2013.	8/12/13
Deutsche Bank, "Diversos - Playing oil price strength. It is not about crude oil any more," September 10, 2013.	9/10/13
Deutsche Bank, "Notes from DB's GEM Conference," September 17, 2013.	9/17/13
Deutsche Bank, "Libra - Oil & Gas Alert - Brazilian Oils. Libra auction," September 20, 2013.	9/20/13
Deutsche Bank, "3Q13 conference call notes," October 28, 2013.	10/28/13
Deutsche Bank, "Price increase: inadequate solution for a structure issue," December 1, 2013.	12/1/13
Deutsche Bank, "Production slips in October but growth is coming," December 3, 2013.	12/3/13
Deutsche Bank, "Holiday present: meeting with top management," December 17, 2013.	12/17/13
Deutsche Bank, "Reserves are here. Waiting for their monetization," January 14, 2014.	1/14/14
Deutsche Bank, "4Q13 preview - improvement despite challenging times," January 28, 2014.	1/28/14
Deutsche Bank, "4Q13 domestic oil production in line with estimates," January 31, 2014.	1/31/14
Deutsche Bank, "4Q13: clouded by one offs, but weak nonetheless," February 26, 2014.	2/26/14
Deutsche Bank, "Key takeaways from new 2014-18 Business and Management Plan," February 26, 2014.	2/26/14
Deutsche Bank, "January production figures weak, but one month does not make a trend," March 6, 2014.	3/6/14
Deutsche Bank, "February production figures: lackluster but not surprising," April 1, 2014.	4/1/14
Deutsche Bank, "LatAm oil & gas," November 19, 2014.	11/19/14
Deutsche Bank, "Receives US SEC subpoena," November 25, 2014.	11/25/14
Deutsche Bank, "Preview of unaudited 3Q14 IFRS results," December 9, 2014.	12/9/14
Deutsche Bank, "Reports positive FCF in 3Q14, targets positive FCF for 2015," December 14, 2014.	12/14/14
Deutsche Bank, "Domestic product prices - a temporary feast," January 7, 2015.	1/7/15
Deutsche Bank, "December Production," January 13, 2015.	1/13/15
Deutsche Bank, "Reports 101% reserve replacement," January 14, 2015.	1/14/15
Deutsche Bank, "3Q14 results solid; conservative guidance for 2015," January 28, 2015.	1/28/15
Deutsche Bank, "New CEO and management board," February 8, 2015.	2/8/15
Deutsche Bank, "January oil output above target," February 16, 2015.	2/16/15
Deutsche Bank, "Moody's downgrades debt to junk," February 25, 2015.	2/25/15
Deutsche Bank, "Weaker Reai creates policy risks - downgrade to Hold," March 5, 2015.	3/5/15
Deutsche Bank, "February production trends down, but still above target," March 20, 2015.	3/20/15
Deutsche Bank, "Petrobras - Beyond 4Q14 results - reiterating Hold," April 16, 2015.	4/16/15
Deutsche Bank, "Conference call feedback," April 23, 2015.	4/23/15
Deutsche Bank, "1Q15 IFRS results preview," May 12, 2015.	5/12/15
Deutsche Bank, "Petrobras Alert - 1Q15 IFRS results review - strong downstream and lower costs," May 17, 2015.	5/17/15
Deutsche Bank, "1Q conference call feedback - in need of clarity," May 19, 2015.	5/19/15
Deutsche Bank, "April domestic oil production recovers 1.2%," May 19, 2015.	5/19/15
Deutsche Bank, "Strategic alternatives," June 10, 2015.	6/10/15
Deutsche Bank, "June production fails to improve," July 12, 2015.	7/12/15
Deutsche Bank, "2Q15 IFRS results preview," August 2, 2015.	8/2/15
Fitch, "Fitch Affirms Petrobras' at 'BBB'; Outlook Stable," December 22, 2010.	12/22/10
Fitch, "Fitch Rates Petrobras' US\$6B Proposed Note Issuances Due 2016, 2021, 2041 'BBB'," January 20, 2011.	1/20/11
Fitch, "Fitch Assigns 'BBB' Rating to Petrobras' EUR1.85B Proposed Notes," December 1, 2011.	12/1/11
Fitch, "Fitch Rates Petrobras' GBP700MM Proposed Notes 'BBB'," December 5, 2011.	12/5/11
Fitch, "Fitch Affirms Petrobras' IDRs at 'BBB' and National Scale Rating at 'AAA(bra)'," March 26, 2013.	3/26/13
Fitch, "Fitch Rates Petrobras' USD11B Proposed Notes 'BBB'," May 14, 2013.	5/14/13
Fitch, "Fitch Rates Petrobras' Euro3.05B and GBP600MM Proposed Notes 'BBB'," January 7, 2014.	1/7/14
Fitch, "Fitch Rates Petrobras' USD8.5B Proposed Notes 'BBB'," March 10, 2014.	3/10/14
Fitch, "Fitch Affirms Petrobras' IDRs at 'BBB' and National Scale Rating at 'AAA(bra)'; Outlook Stable," March 26,	3/26/14
Fitch, "Fitch Downgrades Petrobras' IDRS to 'BBB-'; Places Ratings on Watch Negative," February 3, 2015.	2/3/15

Analyst Reports	Date
Fitch, "Fitch Affirms Petrobras' IDRs at 'BBB-'AAA(bra)'; Revises Outlook to Negative," April 24, 2015.	4/24/15
Fitch, "Fitch Rates Petrobras' Proposed Notes Due 2115 'BBB-'," June 1, 2015.	6/1/15
Fitch, "2015.08.26 Fitch Rating 'AAA (bra)' to Issue Proposal of BRL 3 billion in debentures Petrobras," August 26,	8/26/15
Fitch, "Fitch Affirms Petrobras' IDRs at 'BBB-'; Outlook Negative," October 15, 2015.	10/15/15
Fitch, "Fitch Downgrades Petrobras' IDRs to 'BB+'; Outlook Negative," December 17, 2015.	12/17/15
GBM, "Strike while the oil is hot," February 26, 2014.	2/26/14
Global Market Direct, "Petroleo Brasileiro S.A. Exploration and Production Forecasts and Analysis," January 30, 2010.	1/30/10
Goldman Sachs, "Domestic oil production came in at 1,968kbpd in November --- neutral," January 3, 2013.	1/3/13
Goldman Sachs, "Positive 2Q results, but unlikely to recur in 2H13 given FX impact," August 11, 2013.	8/11/13
Goldman Sachs, "Assessing FX, Brent and fuel price sensitivity – Monthly Update," November 13, 2013.	11/13/13
Goldman Sachs, "November oil output at 1,957 kbpd, -0.1% mom - Slightly negative," January 2, 2014.	1/2/14
Goldman Sachs, " Petrobras announces a 0.8% (SPE) - 1.8% (SEC) increase YoY on its 1P reserves at YE2013 -	1/14/14
Goldman Sachs, " December output at 1,963kbpd but focus is on 2Q ramp-up," January 31, 2014.	1/31/14
Goldman Sachs, " Refineries' impairment appears not as sizeable as RVA suggests," February 14, 2014.	2/14/14
Goldman Sachs, " February output at 1,923.5kbpd, +0.3% mom - Neutral," March 31, 2014.	3/31/14
Goldman Sachs, "Favoring projects with better visibility; PRE down to Neutral, PBR on to Spotlight List," July 13,	7/13/14
HSBC, "First Cut: Q2 2011 IFRS results: Mixed but better bottom line," August 16, 2011.	8/16/11
HSBC, "N(V): Colorblind? 2Q13 results muddled by one-offs," August 12, 2013.	8/12/13
HSBC, "LatAm Oil & Gas and Chemicals," February 10, 2014.	2/10/14
HSBC, "N(V): The other side of the coin," February 25, 2014.	2/25/14
HSBC, "N(V): Long and rocky 'stairway to heaven'," February 26, 2014.	2/26/14
HSBC, "N(V): If darkness falls [correction]," March 12, 2014.	3/12/14
HSBC, "N(V): Updating forecasts; intervention remains a concern," March 12, 2014.	3/12/14
HSBC, "N(V): The burden of government intervention," March 13, 2014.	3/13/14
HSBC, "OW: Small steps toward winning back confidence," March 13, 2014.	3/13/14
HSBC, "N(V): Equity and credit decoupling; we meet with S&P," March 19, 2014.	3/19/14
HSBC, "N(V): Would a credit downgrade mean a price increase," March 24, 2014.	3/24/14
HSBC, "Brazil Downgrade: Corporate Credit Implications," March 25, 2014.	3/25/14
HSBC, "N(V): Debt at record-high 12-digit level," May 12, 2014.	5/12/14
HSBC, "N(V): Down to the nitty-gritty," August 11, 2014.	8/11/14
HSBC, "N(V): Production is ramping up, but not enough," September 29, 2014.	9/29/14
HSBC, "N(V): Bill yet to be sized," November 17, 2014.	11/17/14
HSBC, "LatAm Oil & Chem LogBook," November 17, 2014.	11/17/14
HSBC, "LatAm Oil & Chem LogBook," January 27, 2015.	1/27/15
HSBC, "Downgrade to UW(V) - Don't write me of," January 28, 2015.	1/28/15
HSBC, ""Downgrade to UW(V): Don't Write Me Off," January 28, 2015.	1/28/15
HSBC, "Management - Six of one, half dozen of the other," February 6, 2015.	2/6/15
HSBC, "UW(V): Management – Six of One, Half Dozen of the Other," February 6, 2015.	2/6/15
HSBC, "Client Webcast: A Conversation with Moody's on Petrobras & Brazil," February 23, 2015.	2/23/15
HSBC, "LatAm Oil & Chem LogBook: Today's highlights: PBR, BRKM, Mexico, Colombia," March 10, 2015.	3/10/15
HSBC, "LatAm Oil & Chem LogBook," April 17, 2015.	4/17/15
HSBC, "Petrobras (PETR4 BZ): Reduce: Now what?," April 23, 2015.	4/23/15
Itau, "2009–2013 Strategic Plan," January 25, 2009.	1/25/09
Itau, "Strategic Plan Conference Call," January 27, 2009.	1/27/09
Itau, "Petrobras - 2009 Proven Reserves," January 15, 2010.	1/15/10
Itau, "Petrobras - Capitalization: Higher Chances of Approval?," March 18, 2010.	3/18/10
Itau, "Petrobras - Solid Results x Huge Capex Plan + Higher Debt Profile -21-Mar-10," March 21, 2010.	3/21/10
Itau, "4Q09 Results Conf. Call: All About Capitalization -24-Mar-10," March 24, 2010.	3/24/10
Itau, "Petrobras - Positive News on Pre-Salt Productivity," March 24, 2010.	3/24/10
Itau, "Petrobras - March 2010 Production," April 22, 2010.	4/22/10
Itau, "Petrobras - Our Best Guess for the Capitalization - Part 2 -22-Apr-10," April 22, 2010.	4/22/10
Itau, "Capitalization - It Will Be a Public Offering," May 1, 2010.	5/1/10
Itau, "Petrobras - Talks on Plan B -10-may-10," May 10, 2010.	5/10/10
Itau, "ANP Estimates Franco to Contain 4.5 Billion Boe," May 12, 2010.	5/12/10
Itau, "Petrobras - 1Q10 - Slightly Better But Not A Trigger -14-May-10," May 14, 2010.	5/14/10
Itau, "Petrobras - 1Q10 Conf. Call Highlights -18-May-10," May 18, 2010.	5/18/10
Itau, "Petrobras - Discovery in the Campos Basin -25-may-10," May 25, 2010.	5/25/10
Itau, "Senate Approves the Capitalization Bill," June 10, 2010.	6/10/10
Itau, "The Capitalization Abacus," June 18, 2010.	6/18/10
Itau, "2010-2014 Strategic Plan: US\$224 Billion," June 21, 2010.	6/21/10
Itau, "Capitalization Delayed Until September," June 23, 2010.	6/23/10

Analyst Reports	Date
Itau, "May 2010 Production," June 28, 2010.	6/28/10
Itau, "June 2010 Production," July 19, 2010.	7/19/10
Itau, "Weaker Numbers, Higher Debt Levels," August 13, 2010.	8/13/10
Itau, "Petrobras - 2Q10 Conference Call Highlights," August 17, 2010.	8/17/10
Itau, "Petrobras - Downgrading to Market Perform," October 4, 2010.	10/4/10
Itau, "Petrobras - New Well Confirms Tupi's Potential," October 7, 2010.	10/7/10
Itau, "Petrobras - Libra to Be the First PSC," October 29, 2010.	10/29/10
Itau, "3Q10: In Line, With a Negative Spin," November 11, 2010.	11/11/10
Itau, "Petrobras - The Lower Chamber Has Approved the PSC Bill," December 2, 2010.	12/2/10
Itau, "Acquisition of Repsol's Remaining 30% Stake in REFAP," December 14, 2010.	12/14/10
Itau, "Petrobras - Good News and Bad News Today," December 15, 2010.	12/15/10
Itau, "Petrobras - Tupi Declaration of Commerciality Ahead," December 16, 2010.	12/16/10
Itau, "Good News on the Production Front," December 28, 2010.	12/28/10
Itau, "Declaration of Commerciality for Tupi and Iracema," December 29, 2010.	12/29/10
Itau, "Petrobras - Negotiations to Acquire a Stake in Galp," January 4, 2011.	1/4/11
Itau, "Trying to Catch Up on Future Production," January 7, 2011.	1/7/11
Itau, "Petrobras - 2010 Proved Reserves," January 16, 2011.	1/16/11
Itau, "Petrobras - December 2010 Production," January 24, 2011.	1/24/11
Itau, "Petrobras - Another Hit in the Santos Pre-Salt," January 26, 2011.	1/26/11
Itau, "Creation of Sete Brasil and the Cherne II Platform Stoppage," February 11, 2011.	2/11/11
Itau, "Petrobras - New Oil Accumulation in the Santos Pre-Salt," February 15, 2011.	2/15/11
Itau, "January 2011 Production," February 22, 2011.	2/22/11
Itau, "4Q10 – Uninspiring Results," February 25, 2011.	2/25/11
Itau, "Petrobras - 4Q10 Conference Call Highlights," March 1, 2011.	3/1/11
Itau, "Petrobras - February 2011 Production," March 22, 2011.	3/22/11
Itau, "Petrobras - Guara Well Test and Local Content," April 12, 2011.	4/12/11
Itau, "Petrobras - March 2011 Production," April 26, 2011.	4/26/11
Itau, "Petrobras Finds a Light 350 MM Barrel," April 29, 2011.	4/29/11
Itau, "Pre-Salt Reservoir in Albacora Field," May 1, 2011.	5/1/11
Itau, "1Q11: Weaker Top Line Reflected Across the Board," May 14, 2011.	5/14/11
Itau, "Petrobras - Petrobras April 2011 Production," May 22, 2011.	5/22/11
Itau, "Petrobras - May 2011 Production," June 16, 2011.	6/16/11
Itau, "Petrobras - No Approval for the 2011-15 Strategic Plan," June 17, 2011.	6/17/11
Itau, "Petrobras - Moving Up the Scheduled Maintenance of the P37 Platform," July 7, 2011.	7/7/11
Itau, "Petrobras - Higher Flow Rates In Lula," July 8, 2011.	7/8/11
Itau, "Changes in Management?," July 15, 2011.	7/15/11
Itau, "June 2011 Production," July 18, 2011.	7/18/11
Itau, "2011-2015 Strategic Plan: USD 224.7 Billion – Flat After All," July 24, 2011.	7/24/11
Itau, "Petrobras - Counterintuitive Conclusions on Petrobras Versus Oil," August 12, 2011.	8/12/11
Itau, "Petrobras - 2Q11 Results – Weaker Operational Performance on Rising Costs," August 15, 2011.	8/15/11
Itau, "Petrobras - 2Q11 Conference Call Highlights," August 17, 2011.	8/17/11
Itau, "Cutting the Target Price on Higher Long-Term Capex," August 23, 2011.	8/23/11
Itau, "Petrobras - July Production Down 3.8% Monthly," August 24, 2011.	8/24/11
Itau, "August Production – No Improvements From July," September 22, 2011.	9/22/11
Itau, "Petrobras - Production in September, Slight Improvement," October 24, 2011.	10/24/11
Itau, "Petrobras - Petrobras Raises Gasoline and Diesel Prices," October 30, 2011.	10/30/11
Itau, "Petrobras - Highlights of Lunch with Petrobras CFO," November 7, 2011.	11/7/11
Itau, "Second Well in Franco Confirms the Potential," November 10, 2011.	11/10/11
Itau, "Petrobras - 3Q11 – Uninspiring and Full of Non-Recurring Items," November 13, 2011.	11/13/11
Itau, "Petrobras - 3Q11 Conference Call – All About Production!," November 16, 2011.	11/16/11
Itau, "Petrobras - October Production," November 25, 2011.	11/25/11
Itau, "November 2011 Production," December 21, 2011.	12/21/11
Itau, "Petrobras - New Oil Accumulation in the Espirito Santo Basin," January 2, 2012.	1/2/12
Itau, "Declaration of Commerciality for the Guara Field," January 2, 2012.	1/2/12
Itau, "Petrobras - 2011 Proved Reserves," January 12, 2012.	1/12/12
Itau, "Petrobras - When Macro Prevails," January 12, 2012.	1/12/12
Itau, "Petrobras - 4Q11 Results – Really Disappointing," February 9, 2012.	2/9/12
Itau, "Drilling of the First Well Concluded in the Transfer-of-Rights Area," February 9, 2012.	2/9/12
Itau, "Petrobras - 4Q11 Conference Call Highlights," February 14, 2012.	2/14/12
Itau, "Petrobras - January Production," February 24, 2012.	2/24/12
Itau, "Petrobras - Thoughts on Diesel and Gasoline Price Increases," February 28, 2012.	2/28/12

Analyst Reports	Date
Itau, "Petrobras - Cutting Estimates Despite the Potential Increase in Prices," March 12, 2012.	3/12/12
Itau, "February Production," March 29, 2012.	3/29/12
Itau, "Pre-Salt Discovery Outside the Cluster: Positive for QGEP, Neutral for PBR," April 13, 2012.	4/13/12
Itau, "Petrobras: March Production 105 kbpd Lower Sequentially!," May 4, 2012.	5/4/12
Itau, "Petrobras - 1Q12 - Helped by Lower Diesel Imports," May 15, 2012.	5/15/12
Itau, "Petrobras - 1Q12 Conference Call Highlights," May 17, 2012.	5/17/12
Itau, "Petrobras: Another Discovery in the Campos Pre-Salt," May 24, 2012.	5/24/12
Itau, "April Official Production & Pre-Salt Discovery in the Transfer-of-Rights Area," June 11, 2012.	6/11/12
Itau, "New Strategic Plan: Higher Capex, Lower Production = Lower Cash Generation," June 14, 2012.	6/14/12
Itau, "Do Not Fight the Numbers – Cutting FV on Lower Production," June 15, 2012.	6/15/12
Itau, "Management Presentation, Part I," June 25, 2012.	6/25/12
Itau, "Management Presentation, Part II," June 26, 2012.	6/26/12
Itau, "Another 6% Diesel Price Increase – Very Positive," July 12, 2012.	7/12/12
Itau, "June Production," July 30, 2012.	7/30/12
Itau, "2Q12 – It Can Always Get Worse..," August 3, 2012.	8/3/12
Itau, "It All Depends on Another Fuel-Price Increase," August 6, 2012.	8/6/12
Itau, "Our Thoughts on a Potential Fuel-Price Increase," August 8, 2012.	8/8/12
Itau, "Another Discovery in Transfer-of-Rights Area," August 21, 2012.	8/21/12
Itau, "July Production," August 29, 2012.	8/29/12
Itau, "August Production & Transocean Operations," September 30, 2012.	9/30/12
Itau, "September Production Poised to Disappoint," October 19, 2012.	10/19/12
Itau, "3Q12 – Higher Costs Partially Offset Price Increase," October 26, 2012.	10/26/12
Itau, "3Q12 – Conference Call Highlights," October 29, 2012.	10/29/12
Itau, "October Production," November 26, 2012.	11/26/12
Itau, "Cutting FV. Higher Costs Offset Price Increase," December 11, 2012.	12/11/12
Itau, "Potential Cost Cut of BRL 8 Billion per Year," December 19, 2012.	12/19/12
Itau, "November Production," January 3, 2013.	1/3/13
Itau, "The Cost of Gas for Petrobras," January 4, 2013.	1/4/13
Itau, "2012 Proven Reserves," January 11, 2013.	1/11/13
Itau, "Gas-to-Power in Brazil: A Long and Confusing Story," January 13, 2013.	1/13/13
Itau, "A Frustrating Price Increase After All," January 29, 2013.	1/29/13
Itau, "Feeble 4Q12 Results; Indebtedness on the Rise," February 5, 2013.	2/5/13
Itau, "Highlights From the Conference Call," February 5, 2013.	2/5/13
Itau, "January 2013 Production Down 6.9% YoY," February 28, 2013.	2/28/13
Itau, "How Cheap Is Cheap Enough," March 3, 2013.	3/3/13
Itau, "Another Increase in Diesel Prices," March 5, 2013.	3/5/13
Itau, "Strategic Plan: Flat Capex Is a Positive!," March 17, 2013.	3/17/13
Itau, "Strategic Plan – Conference Call Highlights," March 19, 2013.	3/19/13
Itau, "February Production – Negative," April 1, 2013.	4/1/13
Itau, "1Q13 Results. Finally, Some Good News," April 26, 2013.	4/26/13
Itau, "1Q13 Conference Call Highlights," April 29, 2013.	4/29/13
Itau, "More on the Pre-Salt Bid Round," May 29, 2013.	5/29/13
Itau, "April Production Up 4.2% Sequentially – Positive," May 31, 2013.	5/31/13
Itau, "Divestments Raise USD 1.8 Billion," June 16, 2013.	6/16/13
Itau, "The Right Environment for Big Mistakes," June 27, 2013.	6/27/13
Itau, "No Rush to Buy," June 28, 2013.	6/28/13
Itau, "May Production Down 4.9% Yearly," July 2, 2013.	7/2/13
Itau, "Libra - Libra Bid Round – Rules Set, Fears Confirmed," July 4, 2013.	7/4/13
Itau, "Change in Accounting – Negative," July 11, 2013.	7/11/13
Itau, "No JV for Convenience Stores," July 23, 2013.	7/23/13
Itau, "2Q13 Earnings Preview," July 24, 2013.	7/24/13
Itau, "June Production Up 4.6% Sequentially," July 31, 2013.	7/31/13
Itau, "The Brazilian PSC - Another 'Jabuticaba'," August 6, 2013.	8/6/13
Itau, "Weak 2Q13, Raising Debt Levels & Unfavorable Outlook," August 11, 2013.	8/11/13
Itau, "2Q13 Conference Call Highlights," August 12, 2013.	8/12/13
Itau, "Quo Vadis. 10% Price Hike is Just Not Enough," August 26, 2013.	8/26/13
Itau, "Another Monthly Production Drop," September 2, 2013.	9/2/13
Itau, "July's 4.6% Monthly Production Drop Confirmed," September 3, 2013.	9/3/13
Itau, "Desinvestimento - Divesting From Production Assets in Colombia," September 15, 2013.	9/15/13
Itau, "August Production – Still Down 1% YoY," October 1, 2013.	10/1/13
Itau, "Libra Bid Round – The Lesser Evil," October 21, 2013.	10/21/13

Analyst Reports	Date
Itau, "3Q13 Earnings Preview," October 24, 2013.	10/24/13
Itau, "Semptember Production - Positive," October 25, 2013.	10/25/13
Itau, "3T13 - Weak 3Q13, Overshadowed by Hint of a Pricing Formula," October 27, 2013.	10/27/13
Itau, "Assessing the Pricing-Formula Implications," October 28, 2013.	10/28/13
Itau, "Clarification of the Pricing Policy," October 30, 2013.	10/30/13
Itau, "USD 2.6 Billion Divestment in Peru," November 13, 2013.	11/13/13
Itau, "Board Meeting Delayed, No Agreement So Far," November 21, 2013.	11/21/13
Itau, "Formula Approved. Why Not Disclose It," December 1, 2013.	12/1/13
Itau, "Clarification of the Secret Formula," December 4, 2013.	12/4/13
Itau, "October Production Lags," December 4, 2013.	12/4/13
Itau, "Meeting with Ms. Foster to Discuss Pricing Methodology," December 9, 2013.	12/9/13
Itau, "November Production – Weak," January 2, 2014.	1/2/14
Itau, "2013 Proven Reserves," January 14, 2014.	1/14/14
Itau, "The LatAm Big Book 2014," January 15, 2014.	1/15/14
Itau, "News on the Fuel Pricing Policy," January 17, 2014.	1/17/14
Itau, "Production in 2013 Warrants Cautious Stance," January 31, 2014.	1/31/14
Itau, "4Q13 Earnings Preview - Sector Flash," February 4, 2014.	2/4/14
Itau, "Earnings Release Postponed," February 5, 2014.	2/5/14
Itau, "Five Themes to Play in 2014, If FX Allows," February 9, 2014.	2/9/14
Itau, "4Q13 Earnings Preview," February 11, 2014.	2/11/14
Itau, "A Plan Full of Catches With No Price Increase," February 26, 2014.	2/26/14
Itau, "January Production – Not a Good Start," March 5, 2014.	3/5/14
Itau, "January Production – Weak Figures Confirmed," March 6, 2014.	3/6/14
Itau, "The DistCos' Rescue – It Can Always Get Worse," March 14, 2014.	3/14/14
Itau, "Clarifying the 2014-18 Business Plan," March 24, 2014.	3/24/14
Itau, "Utilities-Petrobras - Rules for the A-0 Auction," March 24, 2014.	3/24/14
Itau, "February Production - Still Flat," April 1, 2014.	4/1/14
Itau, "Reading Through the A-0 Cap Prices," April 16, 2014.	4/16/14
Itau, "March Production – Flat Sequentially," May 2, 2014.	5/2/14
Itau, "The Petrobras of Our Dreams," May 8, 2014.	5/8/14
Itau, "In-Line 1Q14 – Clarification Needed on Gas & Power," May 9, 2014.	5/9/14
Itau, "1Q14 Conference Call Highlights," May 12, 2014.	5/12/14
Itau, "Lunch with PPSA CEO Oswaldo Pedrosa," June 2, 2014.	6/2/14
Itau, "Pay Up Front - The Future Is Bright," June 24, 2014.	6/24/14
Itau, "CNPE Issues Rules of the New PSA Agreement," June 26, 2014.	6/26/14
Itau, "You Have to Agree With the Enemy!," June 27, 2014.	6/27/14
Itau, "May Production," July 1, 2014.	7/1/14
Itau, "2Q14 Earnings Preview," July 17, 2014.	7/17/14
Itau, "Weak 2Q14, 4.1x Net Debt-EBITDA, Relief on Production," August 8, 2014.	8/8/14
Itau, "2Q14 Conf Call - What if we had parity & could controle FX," August 11, 2014.	8/11/14
Itau, "The Petrobras of Our Highest Dreams," September 1, 2014.	9/1/14
Itau, "August Production," September 15, 2014.	9/15/14
Itau, "Itaú BBA on Commodities - Itaú BBA's 6th Commodities Conference," October 3, 2014.	10/3/14
Itau, "September Production up 2% MoM and 7% YoY," October 15, 2014.	10/15/14
Itau, "LatAm Oil & Gas - What If Oil Prices Remain Weak," October 16, 2014.	10/16/14
Itau, "3Q14 Earnings Preview," October 22, 2014.	10/22/14
Itau, "Petrobras - A Pyrrhic Victory – Price Increase Approved," November 7, 2014.	11/7/14
Itau, "October Production Up 0.4% MoM and 8.5% YoY," November 12, 2014.	11/12/14
Itau, "Itaú - PBR Conference Call - What Happens Next.pdf," November 17, 2014.	11/17/14
Itau, "No Non-Audited 3Q14 Results For Now," December 14, 2014.	12/14/14
Itau, "November Production - almost flat monthly," December 29, 2014.	12/29/14
Itau, "December Production," January 13, 2015.	1/13/15
Itau, "3Q14 – No News Is... Bad News!," January 28, 2015.	1/28/15
Itau, "Aldemir Bendine Is the New CEO," February 6, 2015.	2/6/15
Itau, "Downgrade – Negative, for Sure!," February 25, 2015.	2/25/15
Itau, "Revising Fair Value on Lower Oil and Weaker BRL," March 16, 2015.	3/16/15
Itau, "1Q15 Earnings Preview," April 19, 2015.	4/19/15
Itau, "Highlights of PBR's Conference Call," April 23, 2015.	4/23/15
Itau, "1Q15 Surpasses Forecasts on Better Refining Margin," May 17, 2015.	5/17/15
Itau, "1Q15 Conference Call Highlights," May 18, 2015.	5/18/15
Itau, "April Production Up 1.2% on Monthly Basis," May 19, 2015.	5/19/15

Analyst Reports	Date
Itau, "May Domestic Production Drops 1.1% MoM," June 12, 2015.	6/12/15
Itau, "2015-19 Business Plan Capex at USD 165 Billion," June 23, 2015.	6/23/15
J. Safra, "Weak 2Q11 Ebitda Margin - Growth Story Remains," August 15, 2011.	8/15/11
J. Safra, "No Surprises On 3Q11 Results - November 11, 2011," November 11, 2011.	11/11/11
J.P. Morgan, "A Guide To Pbr'S Capitalization; Not As Easy As The Abcs," January 26, 2010.	1/26/10
J.P. Morgan, "Q4 09 Results Preview," February 1, 2010.	2/1/10
J.P. Morgan, "Cost Spikes Cause Sequential Decline in 3Q10; Capex on Higher Gear; Still Neutral," November 12,	11/12/10
J.P. Morgan, "Petrobras: Weak Across the Board," August 16, 2011.	8/16/11
J.P. Morgan, "Petrobras: Strong Results on the Back of Assets Divestment," August 12, 2013.	8/12/13
J.P. Morgan, "Oil Market Monthly: MENA supply risks bolster Brent market outlook," August 12, 2013.	8/12/13
J.P. Morgan, "Another Step on the Divestment Plan - ALERT," November 13, 2013.	11/13/13
J.P. Morgan, "Latin America Oil & Gas," January 2, 2014.	1/2/14
J.P. Morgan, "Petrobras Informed its production was unchanged at 1,957kbd (-0.1% m_m) in November," January 2,	1/2/14
J.P. Morgan, "Petrobras: Significant Reserve Increase," January 14, 2014.	1/14/14
J.P. Morgan, "LatAm Oil & Gas," January 16, 2014.	1/16/14
J.P. Morgan, "Petrobras: Stable Production over 4Q13," January 31, 2014.	1/31/14
J.P. Morgan, "Timid September's Production Numbers; September Domestic Output Increased 0.6% m/m - ALERT,"	10/15/14
J.P. Morgan, "JPM: Valor Economico Saying Petrobras Board should decide on a Gasoline/Diesel Price Readjustment	10/30/14
J.P. Morgan, "Petrobras Quarterly Operational Numbers Bring No News – Focus on Today's Call," November 17,	11/17/14
J.P. Morgan, "Partial Information from 3Q14 Results; Missing Financial and Operational Data," December 15, 2014.	12/15/14
J.P. Morgan, "3Q14 Unaudited Numbers - No Provisions on "Lava Jato" Operations - ALERT," January 28, 2015.	1/28/15
J.P. Morgan, "3Q14 Results Conference Call Highlights: Focus Is to Save Cash," January 29, 2015.	1/29/15
J.P. Morgan, "Further Implications of Moody's Downgrade - ALERT," February 26, 2015.	2/26/15
Jefferson, "PETROBRAS BRASILEIRO -ADR," January 29, 2010.	1/29/10
Jefferson, "PETROBRAS BRASILEIRO -ADR," January 3, 2014.	1/3/14
Jefferson, "PETROBRAS BRASILEIRO -ADR," January 10, 2014.	1/10/14
Jefferson, "PETROBRAS BRASILEIRO -ADR," January 17, 2014.	1/17/14
Jefferson, "PETROBRAS BRASILEIRO -ADR," January 24, 2014.	1/24/14
Jefferson, "PETROBRAS BRASILEIRO -ADR," January 31, 2014.	1/31/14
Jefferson, "PETROBRAS BRASILEIRO -ADR," February 7, 2014.	2/7/14
Jefferson, "PETROBRAS BRASILEIRO -ADR," February 14, 2014.	2/14/14
Jefferson, "PETROBRAS BRASILEIRO -ADR," February 21, 2014.	2/21/14
Jefferson, "PETROBRAS BRASILEIRO -ADR," February 28, 2014.	2/28/14
Jefferson, "PETROBRAS BRASILEIRO -ADR," March 7, 2014.	3/7/14
Jefferson, "PETROBRAS BRASILEIRO -ADR," March 14, 2014.	3/14/14
Jefferson, "PETROBRAS BRASILEIRO -ADR," March 21, 2014.	3/21/14
Jefferson, "PETROBRAS BRASILEIRO -ADR," March 28, 2014.	3/28/14
Moody's, "Moody's upgrades Petrobras's foreign currency rating to A3 from Baa1," June 21, 2011.	6/21/11
Moody's, "Moody's assigns A3 rating to issuances by new Petrobras guaranteed entity," September 25, 2012.	9/25/12
Moody's, "Petrobras S.A.: Rising Debt and Capital Spending Drive Negative Outlook," January 10, 2013.	1/10/13
Moody's, "Moody's downgrades Petrobras long-term debt ratings to Baa1," October 3, 2013.	10/3/13
Moody's, "Moody's assigns Baa1 rating to Petrobras' USD 8.5 billion in global notes," March 11, 2014.	3/11/14
Moody's, "Moody's downgrades Petrobras' ratings to Baa2," October 21, 2014.	10/21/14
Moody's, "Moody's lowers Petrobras' baseline credit assessment; global ratings affirmed," December 3, 2014.	12/3/14
Moody's, "Moody's places Petrobras' ratings on review for downgrade," December 23, 2014.	12/23/14
Moody's, "Moody's downgrades Petrobras' ratings to Baa3; maintains review for further downgrade," January 29,	1/29/15
Moody's, "Moody's downgrades Petrobras' ratings to Ba2; maintains review for downgrade," February 24, 2015.	2/24/15
Moody's, "Moody's confirms Petrobras Ba2 rating; outlook is stable," April 27, 2015.	4/27/15
Moody's, "Moody's assigns Ba2 rating to Petrobras Global Finance's proposed notes," June 1, 2015.	6/1/15
Moody's, "Moody's affirms Petrobras' ratings; stable outlook," August 11, 2015.	8/11/15
Moody's, "Moody's downgrades Petrobras' to Ba3 and places ratings on review for downgrade," December 9, 2015.	12/9/15
Moody's, "Moody's downgrades Petrobras and Petrobras Argentina's ratings," February 24, 2016.	2/24/16
Morgan Stanley, "Quick Comment_ Strong Beat In Ebitda And Eps," November 11, 2010.	11/11/10
Morgan Stanley, "Stronger Real May Lead to Hike in Retail Prices," June 28, 2011.	6/28/11
Morgan Stanley, "Quick Comment: Takeaways from the Conference Calls," July 27, 2011.	7/27/11
Morgan Stanley, "Quick Comment_ Slight Miss Versus Consensus Eps," August 15, 2011.	8/15/11
Morgan Stanley, "Takeaways From Conference...Ming Earnings Estimates; Maintain Ow," August 17, 2011.	8/17/11
Morgan Stanley, "Quick Comment: GALP Transaction Brings Positive Read-Across for PBR," November 11, 2011.	11/11/11
Morgan Stanley, "Improving Results in 3Q12; Higher Production Key for 4Q12," October 29, 2012.	10/29/12
Morgan Stanley, "First Glance at 2013–2017 Business Plan: Same \$237B; Less Refining and More E&P," March 17,	3/17/13
Morgan Stanley, "More Barrels a Negative Surprise; Moving to Equalweight on Limited Upside," June 24, 2013.	6/24/13

Analyst Reports	Date
Morgan Stanley, "Positive Evolution in Operating Results in 2Q13, as Expected," August 11, 2013.	8/11/13
Morgan Stanley, "Defining LT Size at 4.0Mbb/d: PBR Not Growing Indefinitely!," February 26, 2014.	2/26/14
Morgan Stanley, "LatAm Oil & Gas," June 15, 2014.	6/15/14
Morgan Stanley, "More Barrels a Negative Surprise; Moving to Equalweight on Limited Upside," June 24, 2014.	6/24/14
Morgan Stanley, "Mgmt Asking for Something Investors Cannot Give PBR: Trust Ahead of Price Hikes," June 29,	6/29/14
Morgan Stanley, "LatAm Oil & Gas," July 13, 2014.	7/13/14
Morgan Stanley, "Operationally In Line 2Q14, but Leverage a Clear Yellow Flag," August 10, 2014.	8/10/14
Morgan Stanley, "LatAm Oil & Gas," August 13, 2014.	8/13/14
Morgan Stanley, "LatAm Oil & Gas," September 14, 2014.	9/14/14
Morgan Stanley, "2014 London Conference: Key Company Takeaways," September 14, 2014.	9/14/14
Morgan Stanley, "PBR & \$85/bbl Oil? A Good Short-Term Combination at the Current (Lack of) Fuel Price Policy,"	10/14/14
Morgan Stanley, "LatAm Oil & Gas," October 16, 2014.	10/16/14
Morgan Stanley, "LatAm Oil & Gas," November 12, 2014.	11/12/14
Morgan Stanley, "Risks of Financial Statements Postponement," November 17, 2014.	11/17/14
Morgan Stanley, "LatAm Oil & Gas," December 17, 2014.	12/17/14
Morgan Stanley, "No Consensus on Write-Offs, but they Look Materially Higher than Expected," January 28, 2015.	1/28/15
Morgan Stanley, "Conference Call Feedback: Is PBR Finally Under-Guiding to Over-Deliver?," January 29, 2015.	1/29/15
Morgan Stanley, "LatAm Oil & Gas," February 5, 2015.	2/5/15
Morgan Stanley, "New CEO Appointed; But We Think Tenure Could be a Short One," February 6, 2015.	2/6/15
Morgan Stanley, "LatAm Oil & Gas," February 24, 2015.	2/24/15
Morgan Stanley, "Will Buyers Pay Fair Value for PBR's Increased Divestment Program?," March 2, 2015.	3/2/15
Morgan Stanley, "LatAm Oil & Gas - Brazil Oil Tracker - Cutting Petrobras Capex Could be a Double Edged Sword,"	4/1/15
Morgan Stanley, "Cash Flow Outlook Still Challenging in 2015 (and yes, PBR Finally Reported)," April 23, 2015.	4/23/15
Morgan Stanley, "Downgrading to Underweight," April 26, 2015.	4/26/15
Morgan Stanley, "The Tough Road to Deleveraging; Downgrading to Underweight," April 26, 2015.	4/26/15
Morgan Stanley, "Oil, Gas & Petrochemicals - Still Favor Defensive Stocks; Revising Targets & Estimates on New	5/3/15
Morgan Stanley, "Brazil Oil Tracker - Is Low Single-Digit Production Growth the New Norm," June 3, 2015.	6/3/15
Morgan Stanley, "What If the New 5-Year Capex is \$165B Near-Term Bear Case Could Materialize," June 23, 2015.	6/23/15
Morgan Stanley, "Business Plan More Questions than Answers; Deleveraging Still Uncertain," June 30, 2015.	6/30/15
Morgan Stanley, "The Commodity Manual Metals- Costs vs Price; Oil & Gas Headwinds Remain.pdf," July 27, 2015.	7/27/15
Morningstar, "Petrobras Posts Improved Earnings Despite Downstream Losses," August 17, 2011.	8/17/11
Morningstar, "Petrobras' growth prospects prove elusive," January 10, 2014.	1/10/14
Morningstar, "Petrobras' growth prospects prove elusive," January 14, 2014.	1/14/14
Morningstar, "Concerns Remain, but an Adequate Margin of Safety in Petrobras Presents an Opportunity," February	2/27/14
Morningstar, "Petrobras' worst looks to be behind it as production growth has finally arrived," February 28, 2014.	2/28/14
Morningstar, "We Still Like Petrobras, but Rally Rests on Wishful Thinking," March 27, 2014.	3/27/14
Morningstar, "Corruption Investigation Likely Headwind for Petrobras Despite Improving Operations," November 14,	11/14/14
Morningstar, "Petrobras' worst looks to be behind it as production growth has finally arrived," November 18, 2014.	11/18/14
Morningstar, "Petrobras CEO's Departure Could Be Step in Restoring Market Confidence," February 4, 2015.	2/4/15
Plunkett Research, "When You Want Affordable, Timely Industry Research, Contacts & Business Development Data,"	2/15/14
Raymond James, "Domestic Oil Output Ticks Up in 4Q13; Still Outspending Despite CapEx Cut," February 26, 2014.	2/26/14
RBS, "RBS Corporate Trading Desk Strategy," December 15, 2014.	12/15/14
S&P, "NOTA SOBRE RATING 23 SEP 10," September 23, 2010.	9/23/10
S&P, "Petrobras Report dec 10," December 2, 2010.	12/2/10
S&P, "Upgrade Petrobras nov 2011," November 17, 2011.	11/17/11
S&P, "RELATORIO PETROBRAS 2dec11," December 2, 2011.	12/2/11
S&P, "Petrobras Report feb 2012," February 2, 2012.	2/2/12
S&P, "Petroleo Brasileiro Sa Petrobras Petr," January 3, 2013.	1/3/13
S&P, "PBR full report fev 2013 S&P," February 27, 2013.	2/27/13
S&P, "PBR Negative Outlook jun 2013," June 6, 2013.	6/6/13
S&P, "REBAIXAMENTO PETROBRAS MAR 2014," March 24, 2014.	3/24/14
S&P, "FULL REPORT MAIO 2014," May 30, 2014.	5/30/14
S&P, "Petrobras BBB- Ratings Affirmed and SACP Revised to bb from bbb- 16 de dez 2014," December 16, 2014.	12/16/14
S&P, "S&P Comments On Petrobras' Recent Developments And Ratings Are Not Immediately Affected," February 2,	2/2/15
Sadif, "Will Petroleo Brasileiro Petrobras SA Deliver Long-Term Returns?," March 14, 2014.	3/14/14
Santander, "Size of Capitalization Defined? US\$15-US\$30 Billion? Not So Fast—Let Our Calculator Help," February	2/2/10
Santander, "Strengthened Asset Base and Capacity to Monetize Reserves: Execution Is Key Now," October 11, 2010.	10/11/10
Santander, "Could Pn Shares Trade At A Premium To Ons? A Possibility, Depending On Dividend Policy...," January	1/9/13
Santander, "In-Line 2Q13, When Adjusted For Asset Sales; Beware Of Challenging 2H13," August 12, 2013.	8/12/13
Santander, "Despite Slight Increase In Reserves, Challenge Remains In Financing Capex To Monetize Them,"	1/15/14
Santander, "With Disappointing 2013 Production Growth Behind Us, Will 2014 Be Any Different?," February 3, 2014.	2/3/14

Analyst Reports	Date
Santander, "Optimistic Assumptions Fuel Overly Aggressive Strategic Plan; 4Q13 Results," February 26, 2014.	2/26/14
Santander, "A Weak Start To 2014 On The Production Front," March 6, 2014.	3/6/14
Santander, "Insights On Price Parity, Capex, Premium Refineries And Energy Auction Following Meeting With Ceo,"	3/24/14
Santander, "Latin American Daily Perspectives," March 25, 2014.	3/25/14
Santander, "Weak Profitability And Balance Sheet Deterioration Characterize 1Q14, But Does It Matter?," May 12,	5/12/14
Santander, "No Adjustments Made To Unaudited 3Q14 Results," January 28, 2015.	1/28/15
Santander, "Insightful Conference Call With Fitch About	3/11/15
Santander, "Postpones Release Of Unaudited Financial Statements; Expects To Become Fcf Positive In 2015,"	12/15/15
Societe Generale, "We suspect low quality beat will weigh on shares given 'macro' overhang," August 16, 2011.	8/16/11
Societe Generale, "What is behind Petrobras's negative outlook?," January 3, 2013.	1/3/13
Societe Generale, "Petrobras," February 26, 2014.	2/26/14
Societe Generale, "Quarterly results 2% lower QoQ oil volumes, higher costs lead to lower reported EPS," May 12,	5/12/14
Societe Generale, "Petrobras," October 15, 2014.	10/15/14
Societe Generale, "Petrobras," November 14, 2014.	11/14/14
Societe Generale, "3Q14 news release more 'top-line' and understandable, but not helpful in current oil price malaise,"	12/16/14
Societe Generale, "Quarterly results R\$2.7 billion impairment in Q, more is likely coming," January 28, 2015.	1/28/15
Societe Generale, "Petrobras," March 25, 2015.	3/25/15
Thomson Reuters, "PETR4.SA - Q4 2013 Petroleo Brasileiro SA Petrobras Earnings Conference Call & 2030	2/26/14
Trefis, "Petrobras 2014 Q3 Preview: Corruption Investigations To Cloud Improvements In Key Business Drivers,"	12/11/14
Trefis, "Petrobras' Cost Of Capital Set To Rise After Moody's Downgrade," February 26, 2015.	2/26/15
UBS, "When genius failed?," January 26, 2009.	1/26/09
UBS, "Strategy Plan Preview," January 26, 2009.	1/26/09
UBS, "Might Buy Petrochems/Ethanol Despite B/S Constraints to Accelerate Pre-salt Capex," January 13, 2010.	1/13/10
UBS, "Remain Negative in the ST Despite Comforting Statements from CEO Gabrielli," February 1, 2010.	2/1/10
UBS, "Removing ST Sell but Keeping 12-month Neutral; Adjusting PT to R\$44 from R\$48," February 10, 2010.	2/10/10
UBS, "4Q09e Preview and January 2010 Data," February 24, 2010.	2/24/10
UBS, "Strong 4Q09 Offset by Negatives: High Capex Budget/Lower Production Guidance," March 22, 2010.	3/22/10
UBS, "4Q09 Call: US\$15-25bn Cash Need," March 25, 2010.	3/25/10
UBS, "CFO Meeting in New York: Highlights," March 31, 2010.	3/31/10
UBS, "1Q10 In Line; Neutral Reiterated," May 16, 2010.	5/16/10
UBS, "1Q10 Call; New News; Uncertainties Loom," May 18, 2010.	5/18/10
UBS, "Capitalization Countdown: Up to R\$150Bn Capital Increase; 5Bn Valuation Uncertain," May 24, 2010.	5/24/10
UBS, "Santos Update: Positive but Neutral Impact," May 28, 2010.	5/28/10
UBS, "Valuing the ~5bn Boe from Franco," June 1, 2010.	6/1/10
UBS, "Capital Increase: 5Bn Barrel Bill Approved," June 10, 2010.	6/10/10
UBS, "Takeaways from Brazil Oil&Gas Conference in NY – Meeting ANP," June 21, 2010.	6/21/10
UBS, "2010-14 Business Plan Analysis - Negative," June 22, 2010.	6/22/10
UBS, "2010-14 Business Plan Call Highlights," June 22, 2010.	6/22/10
UBS, "Prolonged Overhang Risk – Deal Postponed," June 23, 2010.	6/23/10
UBS, "2Q10e: Watch for Use of Cash & Leverage," July 23, 2010.	7/23/10
UBS, "Downgrading Voting Shares to Sell; Neutral the Preferred Shares – Revised R\$33/sh PT," August 11, 2010.	8/11/10
UBS, "2Q10 Better than Estimates but Still FCF Negative; Equity Offering Likely in the ST," August 15, 2010.	8/15/10
UBS, "P-33 Stoppage – Others to follow," August 16, 2010.	8/16/10
UBS, "2Q10 Earnings Call with CFO: IR - Highlights," August 18, 2010.	8/18/10
UBS, "September 2010 Offering at Risk," August 23, 2010.	8/23/10
UBS, "US\$9/boe Price for 3bn Barrels of Franco; Offering + Details Expected for Sep. 3rd," September 2, 2010.	9/2/10
UBS, "Higher Hot Issue = High Demand or Higher Dilution Ahead?," September 3, 2010.	9/3/10
UBS, "43% Capital Increase or ~US\$67bn Offering," September 6, 2010.	9/6/10
UBS, "US\$67bn Capital Increase with US\$23bn Net Inflow; Remain Cautious - Lower PT," September 24, 2010.	9/24/10
UBS, "MSCI Rebalancing – Favour the PN Shares," September 27, 2010.	9/27/10
UBS, "Sinopec-Repsol Deal Read-Thru," October 1, 2010.	10/1/10
UBS, "Weekly Update – Remain Cautious," October 7, 2010.	10/7/10
UBS, "Upgrading ONs to Neutral; 3Q10e Preview," October 22, 2010.	10/22/10
UBS, "3Q10: Higher Lifting Costs and Opex Offset by Strong," November 12, 2010.	11/12/10
UBS, "Meeting Downstream – Reiterate Neutral," November 22, 2010.	11/22/10
UBS, "Keeping ONs Neutral but Upgrading PNs to Buy on Higher," December 10, 2010.	12/10/10
UBS, "Upgrading PNs to Buy but Keeping ONs Neutral on Higher US\$85 Oil and R\$32 PT," December 10, 2010.	12/10/10
UBS, "Higher R\$33 PT on Upstream Fine-Tuning," February 9, 2011.	2/9/11
UBS, "New Santos Pre-Salt Discovery in BMS-10," February 16, 2011.	2/16/11
UBS, "4Q10 Preview: We Expect a Better Quarter," February 18, 2011.	2/18/11
UBS, "4Q10 EPS Strong but Disappointing EBITDA," February 28, 2011.	2/28/11

Analyst Reports	Date
UBS, "4Q10 CFO Call: Lower Production Target, Higher Capex and Not Better Transparency," March 2, 2011.	3/2/11
UBS, "Upping PT and Estimates on US\$95 Brent," March 16, 2011.	3/16/11
UBS, "1Q11: No Earnings Growth with Higher Oil," April 26, 2011.	4/26/11
UBS, "1Q11 Shows Concerning Outlook; Positive Newflows with Delayed 2011-15 Plan," May 15, 2011.	5/15/11
UBS, "Upgrade to Buy with R\$37/sh PT; 2011-15 Spending Plan a Small Positive," July 25, 2011.	7/25/11
UBS, "2011-15 Spending Plan Call Highlights," July 26, 2011.	7/26/11
UBS, "PETROBRAS and OGX Oil Sensitivity," August 15, 2011.	8/15/11
UBS, "2Q11 EBITDA In Line but Poorer Quality," August 16, 2011.	8/16/11
UBS, "Santos Basin – Raising NPV estimates," August 16, 2011.	8/16/11
UBS, "2Q11 Call Highlight: Unclear Opex Trend," August 17, 2011.	8/17/11
UBS, "Higher Oil Govt. Take - Unlikely in our view," September 19, 2011.	9/19/11
UBS, "Expect High F/X Losses; 3Q11 Preview," October 24, 2011.	10/24/11
UBS, "Increased Gasoline/Diesel Prices by 10/2%," October 31, 2011.	10/31/11
UBS, "3Q11_ One-Off Gains, Low Exploratory Exp.," November 14, 2011.	11/14/11
UBS, "4Q11e: watch for rhetoric of new mgt team," February 8, 2012.	2/8/12
UBS, "4Q11 a negative, 26 new rigs a positive," February 10, 2012.	2/10/12
UBS, "4Q11 call: results not as bad as thought but production curve outlook not as bright," February 15, 2012.	2/15/12
UBS, "Delays in production and refinery start-ups," April 5, 2012.	4/5/12
UBS, "1Q12e preview: PBR needs a price increase," April 26, 2012.	4/26/12
UBS, "1Q12: Graça Foster's first beat," May 16, 2012.	5/16/12
UBS, "Positive CEO message but costly refineries," June 26, 2012.	6/26/12
UBS, "Catalyst update w/ estimate change; still a Buy with R\$33/sh PT," October 15, 2012.	10/15/12
UBS, "R\$5-15bn opex savings goal," October 18, 2012.	10/18/12
UBS, "Weak 3Q12 - high costs with lifting & imports," October 29, 2012.	10/29/12
UBS, "Lower R\$26.5 Base Case PT but stock is trading at Bear Case," December 10, 2012.	12/10/12
UBS, "DPS floor for ON higher than anticipated, but still favour the PN shares," December 11, 2012.	12/11/12
UBS, "4Q12 weak, yet higher capex ahead," February 5, 2013.	2/5/13
UBS, "PSA auction the next valuation driver," May 28, 2013.	5/28/13
UBS, "Libra - PSA Libra: R\$4.5bn signing bonus for 30%: Negative View," July 4, 2013.	7/4/13
UBS, "Libra - PSA Libra: Low double-digit ROEs at best," July 10, 2013.	7/10/13
UBS, "Hedge Accounting - Expect slightly higher dividends for ON shares from upped EP," July 11, 2013.	7/11/13
UBS, "Libra - PBR: Libra PSA contract terms, accounting changes," July 11, 2013.	7/11/13
UBS, "2Q13e we want to see cost-cutting gains," August 4, 2013.	8/4/13
UBS, "2Q13 beat on E&P asset sale gains," August 11, 2013.	8/11/13
UBS, "US Oil Service & Drilling," August 12, 2013.	8/12/13
UBS, "PBR: 2Q13 & Libra," August 13, 2013.	8/13/13
UBS, "Capex Update: Capital Appreciation," August 14, 2013.	8/14/13
UBS, "HRT: Big Miss on Dry Wells, High Expenses," August 14, 2013.	8/14/13
UBS, "Lily's LatAm Oil, Gas & Petrochem Valuation Comps," August 16, 2013.	8/16/13
UBS, "\$2.1bn Asset Sale, Price Hike & Libra Speculations," August 19, 2013.	8/19/13
UBS, "Global Oil & Gas Sector Valuation Sheets," August 19, 2013.	8/19/13
UBS, "PBR weak July production - Libra auction set for Oct 21," September 3, 2013.	9/3/13
UBS, "Libra - Libra PSA: worse than anticipated returns post-updated analysis; final contract is out," September 4,	9/4/13
UBS, "Govt (in lieu of co.) to subsidize consumers," September 8, 2013.	9/8/13
UBS, "PBR: Petroleum Account," September 8, 2013.	9/8/13
UBS, "UBS GLOBAL OILS Analyser," September 9, 2013.	9/9/13
UBS, "Credit rating outlook, 8% price hike," September 16, 2013.	9/16/13
UBS, "Libra: limited interest (11 players) - in line," September 19, 2013.	9/19/13
UBS, "Brazil field trip: access to resources with high local content capex requirements," October 9, 2013.	10/9/13
UBS, "Libra - Libra PSA outcome: good but in line," October 21, 2013.	10/21/13
UBS, "Libra - PBR: Libra Auction a Positive with Total & Shell paying up," October 22, 2013.	10/22/13
UBS, "PBR: 3Q13 miss and pricing formula," October 28, 2013.	10/28/13
UBS, "PBR: 3Q13 weak & a miss, but mgmt has finally proposed a pricing formula to the Board," October 28, 2013.	10/28/13
UBS, "PBR: fuel pricing formula ahead, poor 3Q13," October 30, 2013.	10/30/13
UBS, "PBR sells \$2.6bn Peru assets at fair value," November 13, 2013.	11/13/13
UBS, "Reasonable acquisition in Peru, but small for PTR," November 13, 2013.	11/13/13
UBS, "PBR: More Pricing Policy Waffling," November 21, 2013.	11/21/13
UBS, "Fuel price hike: in line but not yet in our EPS. No disclosure of price formula in line," December 2, 2013.	12/2/13
UBS, "Small fuel price hike to offset weaker FX, higher Brent, Higher imports: More," December 9, 2013.	12/9/13
UBS, "The pricing mechanism: firm commitment, says CEO. Let's then follow the price hikes," December 17, 2013.	12/17/13
UBS, "Price renegotiation of the 5bn Transfer of Rights begins - another key stock catalyst," December 20, 2013.	12/20/13

Analyst Reports	Date
UBS, "5bn ToR negotiations and CEO meeting," December 23, 2013.	12/23/13
UBS, "Bz Oils Recap: Upside and Downside cases - PBR: Nov.2013 prod & refinery incidents - More," January 6,	1/6/14
UBS, "Cutting estimates per PT by c.5% while waiting for refinery-gate price hikes," January 14, 2014.	1/14/14
UBS, "PBR lower R\$20 PT and EPS - +15% fuel oil price - R\$11bn debt issuance - QGEP BS-4 - More," January 15,	1/15/14
UBS, "PBR: pre-salt production ramp up & 1P proven reserves - Russian Oils upgrades - More," January 21, 2014.	1/21/14
UBS, "BG: lower guidance, PT cut - PBR: dismissal program - QGEP: 2019e 1st oil for BM-S-8 - More," January 28,	1/28/14
UBS, "PBR: 2014 production outlook, 4Q13 preview/ QGEP: Atlanta tests/ Karoon/ 4Q13#s/ More," February 6, 2014.	2/6/14
UBS, "4Q13 a beat but 2014-18 plan disappointing," February 26, 2014.	2/26/14
UBS, "CEO meeting:refineries are coming too," February 27, 2014.	2/27/14
UBS, "CEO meeting: domestic price hikes still a 2014 driver, along with production growth," March 25, 2014.	3/25/14
UBS, "1Q14 cash flow in line with lower capex offset by higher working capital needs," May 12, 2014.	5/12/14
UBS, "1Q14 CEO call: cost cutting upside, partially offset by unitization risks; don't count on price hikes," May 12,	5/12/14
UBS, "Bz Fed Govt puts pressure on independent board member," May 23, 2014.	5/23/14
UBS, "Higher tax disputes," June 10, 2014.	6/10/14
UBS, "Selling gas disco GASMIG, but at which price," June 24, 2014.	6/24/14
UBS, "Nova Partilha - Paying the parent upfront for 10-15bn Santos pre-salt barrels under PSA; down to Neutral,	6/25/14
UBS, "Negative new news on the new 10-15bn PSA barrels; comparing valuations for pre-salt oil," June 27, 2014.	6/27/14
UBS, "CEO meeting notes: new "ToR" PSA terms to be better than perceived; final ToR price set for 2015," June 30,	6/30/14
UBS, "Higher Brent, lower cash flows: adding pressure for refinery gate price hikes," July 3, 2014.	7/3/14
UBS, "2Q14 miss on higher costs; R\$4bn in lower capex due to poor pricing policy/spending scrutiny?," August 11,	8/11/14
UBS, "2Q14 call takeaways - production and pre-salt on track but with cost pressure; no pricing formula," August 11,	8/11/14
UBS, "LATAM OILS - PBR - not a GEM Oils top pick; corruption reports; Marina Silva s plans-Tenaris - up to Neutral -	9/10/14
UBS, "LATAM OILS - Argentina - energy reform PBR - Aug output, new tenders QGEP - Carcara EWT More,"	9/23/14
UBS, "Trading at our R\$15sh downside valuation - ho," October 4, 2014.	10/4/14
UBS, "Global Oil & Gas Valuation Sheets 06 October 2014," October 6, 2014.	10/6/14
UBS, "Petrobras would lose; end-users win UBS's (Lily-Carlos)," October 14, 2014.	10/14/14
UBS, "Buy - NAV and balance sheet sensitivity to intl. oil and domestic fuel prices; Comperj cost over-run risks,"	10/16/14
UBS, "What to watch for post-elections," October 27, 2014.	10/27/14
UBS, "3-5% refinery gate price hikes for gasoline-diesel - good but not enough to offset a weaker BRL," November 7,	11/7/14
UBS, "3Q14 will be disclosed 1 month behind schedule - impairment and more transparency on the way.pdf,"	11/13/14
UBS, "Lower PT w/ c.30% EPS cut post-3Q14 delays, CEO/CFO call, and Brazil oils trip - Buy the PNs," November	11/18/14
UBS, "Lower Brent - lower government take and import costs, stronger cash flows. But what about capex," December	12/3/14
UBS, "3Q14 delayed again, but because co. renegotiated loan covenants; lower capex on weaker BRL, Brent,"	12/14/14
UBS, "\$5 bn BNDES-CEF loans for Sete Brasil to deliver made-in-Brazil drilling rigs needed for 2015-16," January 15,	1/15/15
UBS, "Investors' wishes for five key themes in 2015," January 15, 2015.	1/15/15
UBS, "6% price hike at the pump for gasoline-diesel on," January 20, 2015.	1/20/15
UBS, "Resilient domestic prices despite low Brent, for now; changing our price deck and estimates," January 26,	1/26/15
UBS, "3Q14 - clarity over write-off risks; 10-15% lower capex but also lower production guidance for 2015," January	1/28/15
UBS, "3Q14 - is the PN dividend not safe Production problems offset by lower balance sheet risks," January 30, 2015.	1/30/15
UBS, "Who will run Petrobras and where to," February 5, 2015.	2/5/15
UBS, "New CEO and CFO - balance sheet mission; no oil expertise at the Board - more of the same for now,"	2/9/15
UBS, "Junk bonds - credibility shock needed; investors need to hear the CEO and see changes at the Board,"	2/25/15
UBS, "Galp makes large cut to production guidance at CMD," March 10, 2015.	3/10/15
UBS, "Equity issuance Q&A how soon and at which prices Lower PT to reflect \$20bn offering risks," March 11, 2015.	3/11/15
UBS, "Board changes - right direction, but not there yet; FY14 statements - need to be out by May-end," March 27,	3/27/15
UBS, "Board changes - wrong direction; independent," March 31, 2015.	3/31/15
UBS, "Shell sees value in Brazil, offering to buy BG at close to our NAV estimate," April 8, 2015.	4/8/15
UBS, "Lower 5% production CAGR thru 2020e but better balance sheet with capex cuts - asset sale," April 12, 2015.	4/12/15
UBS, "Upcoming catalysts - FY statements by month-end and election of at least 4 new Board members," April 19,	4/19/15
UBS, "FY14 - no PN dividends, but R\$12bn cash gain on big write-down and 40% cut in 2016e capex budget," April	4/23/15
UBS, "Board changes - back to the right direction; next catalysts - PN dividends, new strategy plan," April 30, 2015.	4/30/15
UBS, "Why you should look at the PN shares," May 14, 2015.	5/14/15
UBS, "1Q15 beat on lower costs-SG&A, 20-F filing showed low discount rates for 2014-based impairment test," May	5/17/15
UBS, "Asset sale Q&A - what can be sold and for how much; Petrobras can create value by divesting," June 12, 2015.	6/12/15
UBS, "Meet the alternate members for the Board of Directors, new bylaws a small positive," June 22, 2015.	6/22/15
UBS, "UBS GLOBAL OILS-NOV-Petrobras - NOV PT cut on the back of backlog declines of 18-24% on Brazil rigs,"	6/22/15
UBS, "PETROBRAS (Neutral ON - Buy PN) - New EPS, same NAV-PT with new oil price deck," June 25, 2015.	6/25/15
UBS, "2015-19 plan less leverage with less capex & more asset sale; we still await details on the ToR deal," June 30,	6/30/15
Votorantim Corretora, "2Q11 Earnings Results: Operationally Weak, With Pressure Margins Despite a Higher Price	8/16/11
Votorantim Corretorade, "November 2013 Production Figures," January 2, 2014.	1/2/14
Votorantim Corretorade, "Petrobras Plans Overseas Bond Issue," January 7, 2014.	1/7/14

Analyst Reports	Date
Votorantim Corretorade, "Proven Reserves in 2013," January 15, 2014.	1/15/14
Votorantim Corretorade, "Further Details on 2014 Production," January 16, 2014.	1/16/14
Votorantim Corretorade, "Production Figures for December 2013," January 31, 2014.	1/31/14
Votorantim Corretorade, "New Strategic Plan Announcement," February 25, 2014.	2/25/14
Votorantim Corretorade, "Strategic Plan 2030 and Business Plan 2014-2018," February 26, 2014.	2/26/14
Votorantim Corretorade, "4Q13 Earnings Results: A Weak Quarter," February 26, 2014.	2/26/14
Votorantim Corretorade, "Production Figures for January 2014," March 6, 2014.	3/6/14
Votorantim Corretorade, "Daybreak News - March 07, 2014," March 7, 2014.	3/7/14
Votorantim Corretorade, "Overseas Bond Issue," March 11, 2014.	3/11/14
Votorantim Corretorade, "S&P Lowers Company's Corporate Ratings," March 25, 2014.	3/25/14
Votorantim Corretorade, "1Q14 Earnings Results: A Weak Quarter," May 12, 2014.	5/12/14
Votorantim Corretorade, "2Q14 Results: Weak Operational Figures," August 8, 2014.	8/8/14
Votorantim Corretorade, "Production Figures for July 2014," August 11, 2014.	8/11/14
Votorantim Corretorade, "Petrobras postpones 3Q14 Earnings Release," December 14, 2014.	12/14/14
Votorantim Corretorade, "Non-audited 3Q14 Financial Results Postponed Again," December 15, 2014.	12/15/14
Votorantim Corretorade, "3Q14 Earnings Results: Financial Figures Less Important than Lack of Information," January	1/28/15
Votorantim Corretorade, "Impressions from the 3Q14 Conference Call," January 30, 2015.	1/30/15
Votorantim Corretorade, "CEO Graça Foster Likely to be Replaced," February 4, 2015.	2/4/15

All additional materials cited in my report or exhibits.

List of Facts and Data Blog Posts Cited in the Complaint

- January 28, 2010 – “For example, in a January 28, 2010 post on Facts and Data in response to articles published in several newspapers, including Reuters, Petrobras ‘reiterate[d] that there have been no irregularities in contracts referring to the works of the Abreu e Lima Refinery [and] in the construction of . . . Comperj.’”¹
- January 29, 2010 – “The next day on Facts and Data, Petrobras stated that it ‘reaffirms that there has been no ‘overbilling’ or ‘overpricing’ in the Abreu [] refinery.’”²
- October 8, 2010 – “in response to an article reporting that the TCU found overbilling in Petrobras’ works in Rio, Petrobras insisted that ‘there are no irregularities in the contracts of . . . Comperj’ and ‘there is no overbilling’ at Comperj, and that it had strictly observe[d] competitive bidding mandates governing the Company’s business.’”³
- November 9, 2010 – “in response to TCU allegations that contracts on the Abreu and Repar refineries were overpriced by billions of dollars, Petrobras posted a statement on Facts and Data, stating that “*Petrobras denies that there have been irregularities in the works of the President Getulio Vargas (Repar) and Abreu e Lima (Rnest) refineries.*”⁴
- August 15, 2011 – “Petrobras stated that ‘in regard to material ‘suspect donations’ published in the edition No. 2179 by Istoe, Petrobras vehemently repudiates the insinuation of political favoritism toward the enterprise Jarague Equipamentos Industriais Ltda. or any other enterprise supplying the Company.’ Petrobras further stated that it followed strict bidding procedures.”⁵
- November 8, 2011 – “Petrobras stated the following: ‘Petrobras clarifies that there has not been overbilling, overpricing, or any other irregularity in its works.’”⁶
- December 29, 2012 – “Petrobras represented that ‘all the activities of Petrobras and its employees are fully oriented by principles of ethics and *transparency. The Petrobras system denies any practice of corruption and utilizes rigorous management instruments to guarantee the protection of its shareholders’ interests.*’”⁷
- January 7, 2013 – “in response to questions from *Jornal Nacional* about potential cost overruns at Comperj, Petrobras stated on Facts and Data: ‘*Petrobras reiterates that there are no irregularities in the construction of the Abreu e Lima Refinery . . . [and]*

¹ Complaint, ¶11.

² Complaint, ¶11.

³ Complaint, ¶238.

⁴ Complaint, ¶239.

⁵ Complaint, ¶255.

⁶ Complaint, ¶258.

⁷ Complaint, ¶288.

*also reaffirms that there are no irregularities in the Rio de Janeiro Petrochemical Complex works.”*⁸

- August 7, 2013 – “Petrobras quoted statements made by Gabrielli at a hearing of the Environmental Commission, Consumer Protection and Inspection and Control, requested by Senator Ivo Cassol, during which Gabrielli vehemently denied any wrongdoing by Petrobras with respect to inflated contracts. At the time, he insisted that *‘the acquisition [of the Pasadena Refinery] was a normal operation, based on market conditions.’*”⁹
- November 13, 2013 – “Petrobras published a “Clarification” on its Facts and Data website responding to allegations in an *O Estado de S. Paulo* article regarding the Company’s contracts with Odebrecht. In this post, the Company discussed its bidding process and represented that *‘the process of bidding, contracting and executing Petrobras services are constantly being evaluated by its Internal Auditor and its recommendations are diligently analyzed with a view to protecting the Company’s interests.’*”¹⁰
- May 10, 2014 – “Petrobras posted an entry on its Facts and Data blog regarding allegations concerning bribes made to Company employees by the Dutch oil rig contractor SBM Offshore. Petrobras stated that:

‘Petrobras vehemently denies the story published on Friday[,] May 9, 2014, in the newspaper *O Estado de São Paulo*, reiterating that it became aware of reports of alleged bribes to employees of the company, involving the firm SBM Offshore, on the date the story was published in the newspaper *Valor Econômico* on February 13, 2014.

On that same day, the company established an Internal Verification Committee, which concluded, based on the works performed and within the scope of its regulatory authority, that there were no facts or documents that showed evidence of payment of kickbacks to employees of Petrobras.”¹¹

- May 19, 2014 – “Petrobras posted an entry on its Facts and Data blog regarding the Abreu e Lima refinery, strongly denying allegations of overbilling and contractual irregularities. Petrobras stated that:
 - ‘Petrobras reiterates that there is no ‘overbilling of R\$69.6 million’ in the contract with the Abreu e Lima consortium. Since 2008, the company has been clarifying to the TCU that there are methodological differences for the accounting of items that are specific to the oil industry. In fact, the Court revised the amounts, after those clarifications were made, to R\$19 million. The company continues in discussions

⁸ Complaint, ¶289.

⁹ Complaint, ¶311.

¹⁰ Complaint, ¶320.

¹¹ Complaint, ¶340.

with the TCU to demonstrate that there is no overpricing or overbilling in these projects.”¹²

- May 23, 2014 – “the Company represented that ‘it has strict legal procedures for payments, including for the purchase of Pasadena. . . The payments made for any reason and in any country follow strict and clear procedures and relevant legislation. Additionally, the Company has a structured Internal Audit group, which has unrestricted access to any unit of the Petrobras System to verify the compliance of procedures and transactions made.’”¹³
- July 12, 2014 – “Petrobras represented that it has not found any facts or documents evidencing the payment of bribes to employees at Petrobras. Petrobras also stated that:

‘Regarding the purchase of the Pasadena refinery, despite what the story reports, Petrobras did not pay an ‘in extreme excess.’ The purchase price was consistent with other refinery purchase/sale transactions in 2006. . . . Regarding SBM, Petrobras reiterates, as was already reported to the newspaper, that the Internal Verification Committee established by the company, based on the works performed and within the scope of its regulatory authority, did not find any facts or documents that prove payment of kickbacks to Petrobras employees. It must also be stressed that the investigations conducted by SBM Offshore found no evidence of improper payments.’”¹⁴

- July 14, 2014 – “Petrobras stated that there is no indication of irregularities and there is no overpricing or overbilling in the project of the Abreu refinery.”¹⁵

¹² Complaint, ¶345.

¹³ Complaint, ¶346.

¹⁴ Complaint, ¶348.

¹⁵ Complaint, ¶349.

Refinery-Related Disclosures in Petrobras SEC Filings

Date	Filing Type	Refinery	Summary
9/29/05	6-K	RNEST	Refinery in the Northeast Pernambuco region to be constructed at a cost of \$2.5 billion (R\$5.5 billion) (50-50 split) to be ready for production in 2011.
11/17/05	6-K	Pasadena	Petrobras will establish a joint venture trading and refining company in the U.S. with Astra Oil Trading NV to operate the Pasadena Refining System. Refinery is currently being updated to meet EPA clean air standards.
2/3/06	6-K	Pasadena	Pasadena Refinery System Inc. has a capacity of 100 mbb/d. With Petrobras' investments, the refinery will be upgraded to handle 70 mbb/d of heavy oil and feedstock. The cost of the acquisition is \$370.0 million (R\$817.0 million).
3/28/06	6-K	Comperj	Rio de Janeiro Petrochemical Complex (Comperj) will be constructed in the Itaboraí and São Gonçalo municipalities. The initial phase will involve the construction of a Basic Petrochemical Unit, in partnership with the National Economic and Social Development Bank (BNDES), for an investment of \$3.5 billion (R\$7.8 billion). Petrobras expects the total investment (including the second generation of units) to cost approximately \$6.5 billion (R\$14.6 billion).
5/12/06	6-K	Comperj	Building of Comperj has been approved. Construction of the Basic Petrochemical Unit is expected to cost \$3.5 billion (R\$7.5 billion).
6/28/06	20-F	RNEST	Investment for the refinery in the state of Pernambuco (RNEST) is estimated to be \$2.5 billion (R\$5.6 billion). Refinery will have the capacity to process 200 mbb/d of heavy oil with the start of operations planned for 2011.
6/28/06	20-F	REPAR	2005 refining capacity at REPAR was 189,000 bdp, with a throughput of 186,000 bdp, and a utilization of 98%.
9/1/06	6-K	Pasadena	Acquisition of Pasadena concluded for a total investment \$415.8 million (R\$888.7 million).
1/23/07	6-K	Comperj	Construction of Comperj will begin in Q4 2008. Operations will begin in 2012. Total investment will reach \$8.2 billion (R\$21.0 billion) before 2010 and will process 150 mbb/d of heavy oil.
1/23/07	6-K	RNEST	Construction will commence in 2007. Production expected to start in 2012. Total expected investment of \$5.6 billion (R\$10.0 billion) through 2010.
6/26/07	20-F	REPAR	2006: REPAR had a capacity of 189 mbb/d, 183 mbb/d of throughput, and was utilized 97%. Current construction projects include expansion and metallurgical adaptation of the existing distillation unit to increase heavy oil processing, installation of a coker, expansion of existing refinery unit and units to upgrade the quality of diesel and gasoline, and creation of a propylene unit.
6/26/07	20-F	Pasadena	Pasadena had a 2006 capacity of 100 mbb/d, 91 mbb/d of throughput, and was utilized 91%.
6/26/07	20-F	RNEST	The 2007–2011 Business Plan envisions investments in RNEST, which is expected to begin production in 2011.
6/26/07	20-F	Comperj	Total estimated investment in Comperj is \$8.3 billion (R\$16.3 billion). Operations are scheduled to start in 2012.
12/14/07	6-K	RNEST	Petrobras will hold 60% interest in RNEST. The refinery will be capable of processing 200 mbb/d which will be split evenly between the two companies.
12/19/07	6-K	Pasadena	Petrobras will focus international developments in 2008 on expansion of the Pasadena refinery and exploration and production in the Gulf of Mexico.
12/19/07	6-K	REPAR	An HBIO technology that allows the blending of vegetable oil with refinery diesel is being implemented at REPAR.
2/5/08	6-K	Comperj	Construction of Comperj is well underway, with operations to begin in 2012.
3/26/08	6-K	RNEST	Investment in RNEST to be around \$4.1 billion (R\$7.0 billion) and be capable of processing 200 mbb/d. Refinery is expected to go online in the second half of 2010 and to reach full capacity in 2011.
5/19/08	20-F	RNEST	Early stages of constructing RNEST begin.
5/19/08	20-F	REPAR	Principal investment plans for REPAR are to expand refinery, increase heavy oil processing, upgrade diesel and gasoline quality, add new propylene unit.
9/3/08	6-K	Pasadena	International refining costs increased 122.1% to \$5.82 per barrel of oil equivalent in the first half of 2008, as compared to \$2.62 per barrel of oil equivalent in the first half of 2007, due to the scheduled stoppage in the Pasadena refinery associated with the decrease of processed crude oil volume in the first half of 2008.
			Pasadena sales volumes in the international market decreased 6.8% to 594 mbb/d in the first half of 2008, as compared to 637 mbb/d in the first half of 2007, due, in part, to the programmed stoppage in the Pasadena refinery.

Refinery-Related Disclosures in Petrobras SEC Filings

Date	Filing Type	Refinery	Summary
11/3/08	6-K	Pasadena	Resulting from a dispute over the validity of a put option, Petrobras has purchased all of Astra's shares in Pasadena.
3/23/09	6-K	RNEST	Five major contracts signed with a value of \$1.3 billion (R\$2.9 billion) for the construction of RNEST as part of the 2009–2013 Business Plan.
4/16/09	6-K	Pasadena	Arbitration panel issues the final decision setting put option exercise price at \$466.0 million (R\$1,011.0 million) for remaining interest in Pasadena.
5/22/09	20-F	RNEST	RNEST will have a capacity of 230 mbbl/d.
8/6/09	6-K	RNEST	Cost initially foreseen for RNEST, of \$4.0 billion (R\$7.4 billion), "will certainly increase, since the forecast was for three years and a lot has changed," according to Petrobras Downstream director.
8/6/09	6-K	Comperj	Petrobras' Downstream director states that costs are expected to rise from the initial investment of \$8.5 billion (R\$15.7 billion) due to surges in equipment and service prices.
8/26/09	6-K	RNEST	RNEST will process 230 mbbl/d and will require an investment of \$12.0 billion (R\$22.3 billion) (with a margin ranging from -3% to +10%) to start operations in 2011.
12/2/09	6-K	RNEST	Five contracts executed for a total value of \$5.2 billion (R\$8.9 billion) to construct RNEST.
3/15/10	6-K	Pasadena	U.S. District Court for the South District of Texas confirms arbitration panel's decision with respect to Petrobras's acquisition of the remaining interest in Pasadena.
5/20/10	20-F	RNEST	RNEST will cost approximately \$13.3 billion (R\$25.1 billion) and is expected to begin operations in 2012.
5/20/10	20-F	Comperj	Comperj production expected to begin by 2013.
5/24/10	6-K	Comperj	Bidding has been held for the production of a coke unit. Techint and Andrade Gutierrez consortium won a contract worth \$1.0 billion (R\$1.9 billion).
5/25/10	6-K	Comperj	Expected refinery capacity for Comperj is increased in the initial phase to 165 mbbl/d; adding an additional module would double its capacity.
6/21/10	6-K	Comperj	Second stage of Comperj expected to start production in 2015.
9/16/10	6-K	Pasadena	Improved operational reliability of the Pasadena refinery led to a reduction in expenses with maintenance and repairs, increasing the volume of processed crude.
5/25/11	20-F	RNEST	Coking units at RNEST will be delayed until between 2012 and 2014.
5/25/11	20-F	Comperj	Coking units at the Comperj refinery will be delayed until between 2012 and 2014. Comperj's first and second phases are expected to start production in 2013 and 2018, respectively.
5/25/11	20-F	REPAR	The upgrades on diesel and gasoline quality underway at REPAR will be delayed until between 2012 and 2014. The coking unit will also be delayed.
12/27/11	6-K	Comperj	Petrobras acquires 100% of the Comperj utilities center, CDPU.
2/16/12	6-K	RNEST	RNEST refining stage is scheduled to go into production in June 2013 (first stage) and January 2014 (second stage).
2/16/12	6-K	Comperj	Comperj is slated to begin production in September 2014 due to delays in contracting utilities.
3/30/12	20-F	REPAR	Diesel and gasoline quality upgrades and delayed coking units are expected to be completed at 2012, 2013 and 2014 at REPAR. By the end of 2013, REPAR is expected to be among nine of Petrobras' refineries capable of producing 10 ppm sulfur diesel.
5/16/12	6-K	Pasadena	Pasadena's return in November 2011 after its fire in September facilitates higher feedstock processed, output of oil products, utilization of nominal capacity, and reduction of international refining costs. International refining costs decreased in the first quarter of 2012 compared to the first quarter of 2011 due to the lower maintenance and scheduled stoppages expenses in Pasadena.
6/14/12	6-K	Comperj	First phase of Comperj is expected to begin operation by 2016.

Refinery-Related Disclosures in Petrobras SEC Filings

Date	Filing Type	Refinery	Summary
7/2/12	6-K	Pasadena	Agreement reached to terminate all existing lawsuits between Petrobras and Astra regarding ownership interest in Pasadena.
8/8/12	6-K	Pasadena	Compared to the first half of 2011, Pasadena increased output due to scheduled stoppages in the fluid catalytic cracking unit between March 2011 and May 2011. International refining cost decreased in the first half of 2012 compared to the first half of 2011 due to lower stoppages expenses at Pasadena. Additional value provided for the Pasadena agreement totaled \$69.0 million (R\$140.0 million).
8/8/12	6-K	REPAR	REPAR coking unit will begin operating at full capacity in August, increasing diesel production.
10/29/12	6-K	Pasadena	The expenses arising from the Pasadena settlement totaled \$73.0 million (R\$148.0 million). In the first three quarters of 2012 vs. the previous year, international refining cost decreased due to lower maintenance and scheduled stoppages expenses at Pasadena.
10/29/12	6-K	REPAR	REPAR's coking unit and hydrotreater begin operations.
9/30/13	6-K	Comperj	Merger of Comperj into Petrobras is approved.
10/28/13	6-K	RNEST	Board of Directors approve the proposal for the merger of RNEST into Petrobras on December 16, 2013.
3/6/14	6-K	RNEST	In order to reach objective oil production targets set in the 2014-2018 Business Management Plan, RNEST will finish construction in 2014.
4/30/14	20-F	RNEST	84.3% of construction is complete, with \$14.8 billion (R\$32.0 billion) invested. Operations for RNEST are expected to come on stream in Q4 2014.
4/30/14	20-F	Comperj	The first phase of Comperj is expected to go into operation in 2016. Approximately 66% of the construction was completed by the end of 2013. Investments in Comperj were \$7.6 billion (R\$16.9 billion) by year-end 2013.
5/12/14	6-K	Pasadena	Pasadena continues processing over 100 mbbbl/d due to the availability of tight oil at competitive prices, coupled with the removal of operational bottlenecks at its facilities.
5/12/14	6-K	RNEST	RNEST to start operations in November. Some of RNEST's main units are already being commissioned.
8/11/14	6-K	Pasadena	Pasadena produced 106 mbbbl/d in Q2 2014 due to maximization of feedstock and excellent operational availability.
11/17/14	6-K	RNEST	RNEST is already under operation, with its first refining train 96% completed.
5/15/15	20-F	Comperj	Comperj construction has ceased. Management has decided not to participate in the construction of petrochemical plants that were under evaluation or various stages of engineering/design, including Comperj.
6/29/15	6-K	RNEST	11% of the \$12.8 billion (R\$39.9 billion) investment in Downstream will be appropriated for the conclusion of RNEST construction.
6/29/15	6-K	Comperj	10% of the \$12.8 billion (R\$39.9 billion) of investment in Downstream will be appropriated for investments in Comperj.

Source: Petrobras SEC Filings; Bloomberg